APR 24 1928

HYGEIA

THE HEALTH MAGAZINE

Medical Lib.

Published by the American Medical Association

May, 1928 *25 Cents*

"We are advertised by our loving friends"

Mellin's Food–A Milk Modifier

Constipation

Babies who are fed upon fresh sweet milk modified with Mellin's Food are rarely, if ever, troubled with constipation.

This fact alone is enough to justify a preference for Mellin's Food as a means for preparing nourishment for infants who are deprived of human milk, for natural bowel movements at regular intervals contribute much toward good digestion and complete assimilation.

Babies who properly eliminate waste matter are naturally comfortable and happy, enjoy restful sleep and have a much better chance to make the normal weekly gain in weight.

Mellin's Food Biscuits

Especially suitable when it becomes time to wean the baby from the bottle

Mellin's Food Biscuits

A sample box sent free, postage paid, upon request.

Mellin's Food Co., 177 State St., Boston, Mass.

HYGEIA, the Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $3.00; for foreign postage add 50 cents. Volume 6, Number 5. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103, Act of October 3, 1917, authorized March 21, 1923.

HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association
535 North Dearborn Street, Chicago

VOLUME 6 | MAY, 1928 | NUMBER 5

TABLE OF CONTENTS

COVER DESIGN
Janet Laura Scott — PAGE

FRONTISPIECE—XII. NATHAN SMITH 244

EARLY SPRING HAY-FEVER 245
R. P. Wodehouse

THE TOOTHBRUSH—IS IT A MENACE? 249
William M. Gardner

FATIGUE FROM IMPERFECT HEARING 251
Dana W. Drury

ARCHERY COMES BACK 254
George H. Dacy

BLESSED BE SOME CALLERS 258
Dorothy Blake

A PARODY ON "CARE AND FEEDING OF CHILDREN" 260
John C. Emery

GUIDING THE CHILD'S IMAGINATION 261
Russell E. Howard

MORE HEALTHFUL OFFICE CONDITIONS 262

QUACK EPILEPSY CURES 263
Arthur J. Cramp

FARGO AND THE HEALTH HABITS 267
Maud A. Brown

OUTDOOR COMPANIONS 270

CLEANLINESS IS GODLINESS 272
Agnes Donham

PAGE

MUSEUM FATIGUE 274

MENTAL HYGIENE IN HOME AND IN SCHOOL 275
Louis A. Lurie

ALADDIN'S BOTTLE OF MILK 278
Elizabeth Leitzbach

SUGAR AS A FOOD 282
James A. Tobey

HOW DOTH THE LITTLE GERM 285
Ruth Sturtevant

PLAIN FACTS ABOUT HEALTH AND DISEASE:
Smelling and Perfumes 287
Exercise in Old Age 287
Epilepsy 288
The Newer Knowledge of Rickets 288
Big Thrills and Little Dangers 289

THE GOOD HEALTH CIRCUS 290
Marguerite Gode

JUNIOR AND MR. GERM 291
Howard W. Haggard

BOOK REVIEWS 295

NEWS AND VIEWS 296

QUESTIONS AND ANSWERS 298

Contributors to This Issue

Spring fever sometimes means hay-fever. For the benefit of the sufferers R. P. WODEHOUSE explains from a wide investigation just what plants cause the early spring type of hay-fever and where they are likely to be found. W. M. GARDNER, a dentist on the staff of Western Reserve University, has written a number of popular articles for HYGEIA.

Difficulties that beset the hard-of-hearing will be better understood after one has read the sympathetic article by DR. DANA W. DRURY, a specialist in diseases of the ear, nose and throat. GEORGE H. DACY has written on many forms of sport for HYGEIA. DOROTHY BLAKE presents in humorous form a lesson on how not to visit the sick, with some examples of really desirable visitors by way of contrast.

The psychological laboratory of Colgate University furnished the material for RUSSELL HOWARD'S study of imagination as a force in mental development. DR. ARTHUR J. CRAMP of the editorial advisory board of HYGEIA exposes a few of the quackeries discovered by the bureau of investigation of the American Medical Association, of which he is the director.

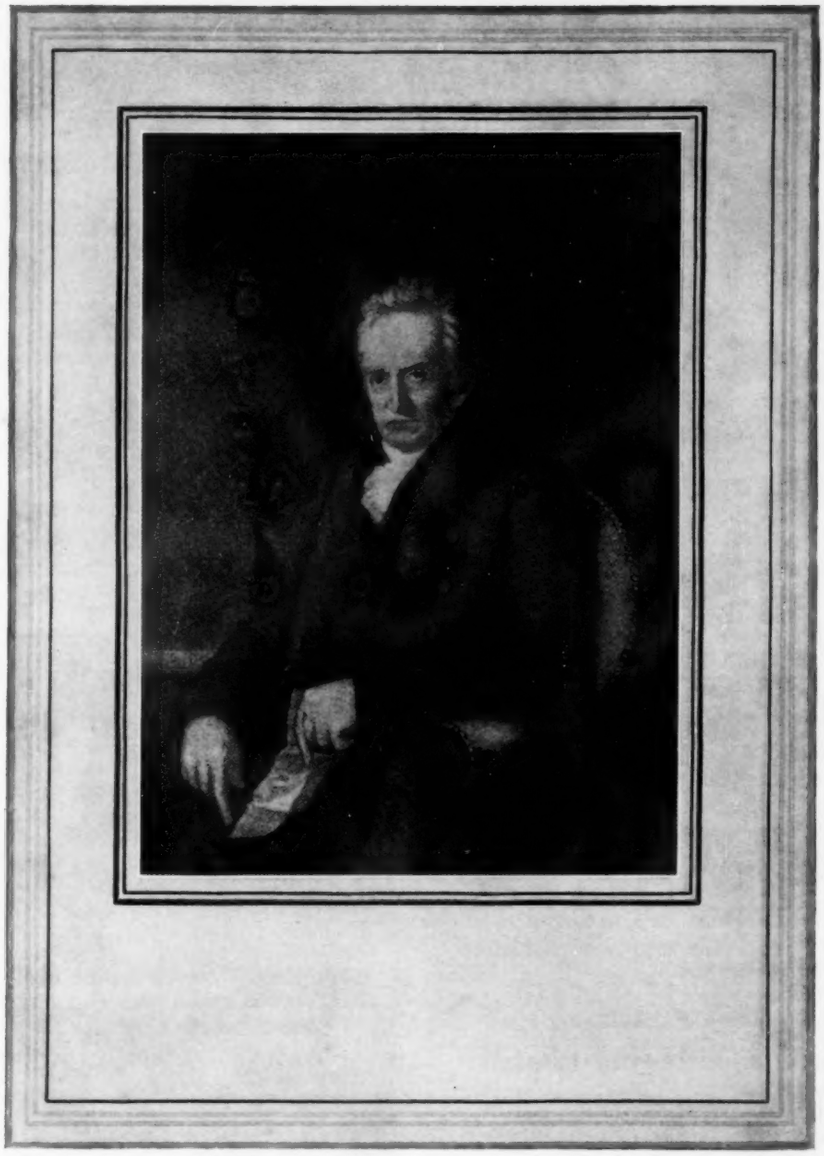
MAUD A. BROWN was a member of the staff of the five-year child health demonstration recently completed in Fargo, N. D., by the Commonwealth Fund. New England's foremost virtue is difficult to pursue in the face of modern smoke and dust making nuisances, AGNES DONHAM finds.

How mental hygiene properly practiced in home and school will prevent many tragedies is explained by a practicing psychiatrist, DR. LOUIS A. LURIE of Cincinnati.

Further information about germs is given by RUTH STURTEVANT, continued from the April issue. JAMES A. TOBEY, DR.P.H., contributes another food study along the lines of former articles. ELIZABETH LEITZBACH'S story of health work in West Virginia shows how widely health education is being carried on and the excellent results it is achieving. DR. HOWARD W. HAGGARD and MARGUERITE GODE are well known contributors.

Copyright, 1928, by the American Medical Association. All rights reserved.

Yearly subscription price, $3.00; for foreign postage add 50 cents.



HEROES OF AMERICAN MEDICINE

XII. Nathan Smith

NATHAN SMITH was born in Massachusetts on Sept. 30, 1762. When he was 20 years old he witnessed a surgical operation, which caused him to desire to enter medicine. Although untaught previously, he studied for a year and was able to qualify for the freshman class of Harvard University. Later he studied with a local physician, began to practice medicine in New Hampshire and then returned to Harvard University, receiving his medical degree in 1790.

After practicing briefly Smith studied in Edinburgh, Glasgow and London, and on his return from Edinburgh brought back medical books and apparatus for teaching anatomy and chemistry. With these he established the medical school in connection with Dartmouth College, taking himself the appointments of professor of anatomy, surgery and chemistry. The president of Dartmouth College, Wheelock, was so fascinated by Nathan Smith and his work that he used to lead the evening prayer as follows:

"O Lord, we thank Thee for the oxygen gas; we thank Thee for the hydrogen gas and for all the gases. We thank Thee for the cerebrum; we thank Thee for the cerebellum and for the medulla oblongata."

In 1813 Nathan Smith left the school at Dartmouth and became professor of the theory and practice of surgery in the school at Yale, although continuing to give lectures at Dartmouth and Burlington. From 1821 to 1826 he was giving lectures in the medical school at Bowdoin College, Maine, which he had been asked to organize. This arduous life rapidly broke his health and he died, Jan. 26, 1829.

Nathan Smith was the founder of the Dartmouth school at a time when the three medical schools in America were the University of Pennsylvania, the medical school of King's College in Columbia and Harvard medical school. In 1812 he joined the faculty of Yale College. He had four sons, all of whom graduated in medicine. They were also instrumental in the founding of medical colleges, being associated with the establishment of the University of Vermont school of medicine in Burlington, the Maine school at Bowdoin and the Jefferson Medical College in Philadelphia.

Early Spring Hay-Fever

By R. P. Wodehouse

TWO of those traditional bits of misinformation that float about almost unchallenged are that early summer hay-fever, or "rose cold," is caused by roses and that late summer hay-fever is caused by goldenrod. Usually such traditions can be traced back to some half truth, and both roses and goldenrod in a few instances play a minor part in the production of hay-fever.

The kind of hay-fever that afflicts people in the early summer months when the roses are blooming is never caused primarily by roses; likewise that which afflicts people during the closing summer months when the goldenrod is blooming is never primarily due to goldenrod. Roses and goldenrod contribute so little that they need scarcely be considered as hay-fever plants.

The principal factor in the production of hay-fever is not the beauty or the conspicuousness of the flowers but the amount of pollen produced. The amount of pollen that a plant is able to disseminate in the atmosphere is a measure of its ability to produce hay-fever.

Inconspicuous Flowers at Fault

Usually the flowers that cause hay-fever are not subjects of admiration and pass unnoticed, but they are frequently associated both in their periods of blooming and in their places of growth with their more conspicuous and beautiful cousins, which are blamed for their misdeeds.

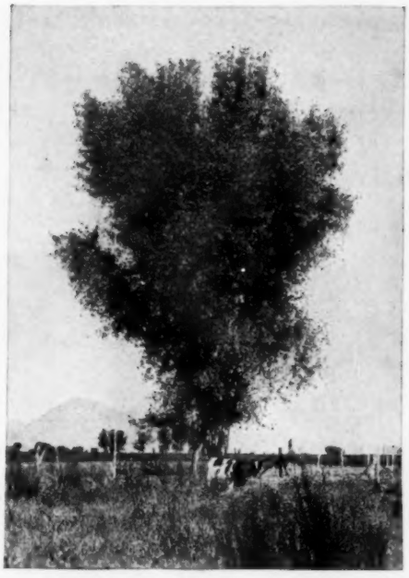
Thus it is that when roses delight the eye with their colors and fill the air with their fragrance, the careful observer will always find near by species of grass with flowers neither beautiful nor fragrant which cast to the winds enormously more pollen than is produced by the roses. In the same way when, at the close of summer, the many species of goldenrod garnish the fields and hills with their beautiful golden sprays, there will always be found in the ditches along the roadside and in abandoned or poorly cultivated fields, great masses of one or more species of ragweed, filling the atmosphere from inconspicuous greenish flowers with infinitely more pollen than is produced from their showy and much admired neighbors.

Early Type Is Usually Mild

Besides the grasses and ragweeds, many other plants contribute to the production of hay-fever. An analysis of these has shown that each climatic area has its own particular group of hay-fever plants. These flower in most localities in three distinct seasons. The hay-fever of the first season, or early spring type, is generally mild and of short duration, coinciding with the flowering of such trees as elm, oak, poplar, birch, maple, walnut and willow, which, taking advantage of the leafless condition of the trees in the early spring, scatter enormous amounts of pollen to the winds. The duration of their flowering is relatively short, consequently this type of hay-fever is less important than that of the following two seasons.

The second hay-fever season coincides with the flowering of the commoner grasses, which are its primary cause. These grasses shed their

Flowers of red maple.



Arizona cottonwood tree and a flowering twig of Arizona cottonwood.

Flowering spray of hackberry.

One of the tree forms of willow, flowering just as the leaves unfold.

Southern hackberry in summer.

Pussywillow; male catkins at left and female at right.

The American white birch is wind pollinated.

pollen in the early summer, beginning just as or even a little before the trees have completed their flowering and continuing until about haying time. The flowering period of the grasses, though generally short, is longer than that of most trees, and so many species with slightly different flowering periods are found associated that the season is considerably longer and the irritation caused by the pollen much more intense than that caused by the trees.

The third period coincides with the flowering of the ragweeds, cockleburs and goldenrods in the East, and with the ragweeds, false ragweeds, cockleburs, sagebrushes and many others in the West.

Some of the trees that contribute their quota of pollen to the early spring hay-fever period will be discussed in this article.

Among the trees previously mentioned as belonging to this class, in the normal process of fertilization the pollen or fertilizing dust is transferred from flower to flower through the agency of the wind, in all except maple and willow. The maples undoubtedly employ insects to effect fertilization. The flowers of the red maple, for example, are colored, sweet scented and provided with nectar, offering every inducement to insects to visit them. Nevertheless in most species of maple, adaptation to pollination by insects is rather imperfect; the anthers protrude beyond the floral envelops so that when the insects clamber over the flower clusters in search of nectar a large amount of pollen is knocked loose and drifts away in the breeze.

Swamp white oak, as it appears when the leaves are unfolding and the flowers are shedding their pollen.

Willow is described by some eminent botanists as insect pollinated and by others equally eminent as wind pollinated. The flowers are sweet scented and attract a large number of bees, so that a blooming willow tree often fairly hums with their industry as they busily plunge their proboscides among the catkins to the nectaries with which each little floret is provided.

Clumsy Bees Spread Pollen

During the bees' clumsy tumbling about among the flowers a large amount of pollen is loosened and drifts away in the air; undoubtedly some of it serves to pollinate the flowers of the female trees that are generally to be found growing near by. Failing to reach the female flowers, it may become a menace to hay-fever sufferers. At any rate there are a number of willow hay-fever cases recorded in medical literature.

The willows, unlike most trees, have a long flowering period and many species and varieties are usually found growing together but not all flowering at exactly the same time. Thus it happens that the blooming of the willows often covers a period extending from the disappearance of the last snows when the first pussy willows flower, long before the first appearance of their leaves, to well into June, when some of the larger tree forms complete their flowering after the leaves are fully developed. It is not known which of the numerous species and varieties of willow are the heaviest contributors to the production of hay-fever, probably because records of authentic cases of willow hay-fever are rare.

The birches, like the willows, are generally represented by several species in the same locality. Thus in northeastern United States, the white, or poplar, birch is generally found associated with the black or gray birches and, though each has a flowering period of scarcely over a week, the three together often extend over three or four weeks. Many more cases of birch hay-fever than of willow have been recorded. This is in keeping with the fact that a larger amount of pollen is produced by the birches and that the wind is the agency employed in pollen transference.

Elms Are Not Beyond Reproach

The elms constitute a potential cause of hay-fever and severe cases of elm hay-fever have been recorded. Though there are several species of elm in the United States, they are not commonly associated. Their flowering periods are usually less than a week, and the few cases of elm hay-fever that have been reported, though frequently severe, are of short duration. The pollen of elms is shed long before the leaves appear, and the flowers are so small and inconspicuous that it is not surprising that they are seldom suspected of causing hay-fever. When the flowers are shedding really prodigious quan-

tities of pollen, they look from the ground like rather large dark reddish buds, swollen and about to burst. Not until the half mature seeds begin to hang out, do they appear really to open.

The poplars, or cottonwoods, like the birches, flower before the first opening of the leaves and are frequently represented by several species in the same locality. The one that is most commonly planted about city dwellings, known as *Populus eugeni*, is of hybrid origin, produced in Germany by crossing the necklace poplar with the balsam poplar. It is always propagated by cuttings and exists only in the male or pollen-producing sex. However, as with most hybrids, the pollen is largely abortive, represented in the anthers by empty skins, and most of the catkins fall prematurely from the trees.

Few, if any, authentic cases of poplar hay-fever have been attributed to this or the various other species of poplar in the eastern states. In the western states, however, Arizona cottonwood, which is extensively planted in southern Arizona and California, is regarded by investigators as a frequent cause of hay-fever; so also are the California cottonwood, western cottonwood and the narrow-leaved cottonwood in regions of the West and Southwest, where they are abundant.

Only One of the Conifers Guilty

Of the many species of conifers, the groups to which the pines, spruces and cedars belong, which are notorious for the large quantities of pollen shed and consequently would be expected to cause hay-fever, only the mountain cedar has definitely been shown to be a factor of importance. In the United States this species is confined to the limestone hills of southern Texas and to a lesser extent New Mexico. Flowering in December and January, it is said to be the cause of winter hay-fever in these regions.

The pollen grains of pines and spruces and many other conifers have their outer coat heavily impregnated with resin, which renders it so impervious to water that the pollen will float for days without absorbing enough water to sink. This imperviousness of the outer coat of the grains probably explains its harmlessness.

The pollen grains of the mountain cedar, on the other hand, are enveloped in a delicate membrane, which bursts immediately upon moistening, discharging the entire contents of the cell and permitting the protein substances to come in contact with the mucous membranes of the nose and throat when the pollen is breathed. This probably explains why the pollen of mountain cedar is an active cause of hay-fever while that of the pines, spruces and many other conifers can be breathed with impunity.

The walnuts of the East (black walnut and butternut), though they shed large quantities of light air-borne pollen, do not constitute a serious factor in hay-fever. On the other hand, the California black walnut, which is much planted as a shade tree in the Sacramento, Napa and Russian river valleys of California, is regarded as the most frequent cause of spring hay-fever in those regions. It is interesting to note that the English walnut, also much grown in California and elsewhere and frequently associated with the California black walnut, is stated by eminent authorities to be nonproductive of hay-fever.

The oaks, which are among the last of the trees to come to leaf in the spring, shed from their slender pendent green catkins an abundance of light air-borne pollen just when the delicate bluish green leaves are unfolding; but this, like that of the walnuts, appears to be of little consequence in the eastern species, though isolated cases of oak hay-fever have been recorded in the East.

In the western and southwestern parts of the United States, several species are regarded as of considerable local importance. Thus the black oak of California and Oregon and the live oak of California have been suspected of causing hay-fever, and the black oak of western Texas, New Mexico and Arizona, and the white oaks of similar distribution are regarded as important in these regions.

Among the sycamores, or plane trees, apparently our native species are quite harmless. In California, however, where an exotic species has been introduced and is extensively planted as a shade tree under the name of California sycamore, it is said to be a serious cause of spring hay-fever.

The hackberries, or nettle trees, have quite frequently been blamed for hay-fever. They bloom early in the spring when the leaves are beginning to unfold and shed large quantities of light air-borne pollen, thus appearing to qualify for the production of hay-fever. In the northeastern states, however, no cases have been recorded for the species that grows there; but in the southern states, particularly in the Mississippi valley, where a large form is abundant, it is probably the cause of some hay-fever.

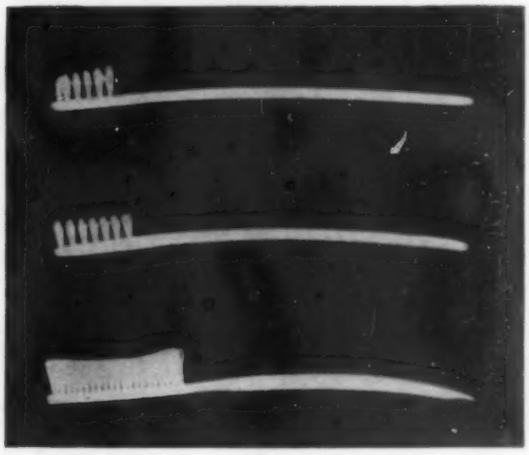
What Type of Tree to Suspect

In general, it may be said that trees with blossoms that are showy, sweet scented or otherwise attractive to insects shed so little pollen that they need not seriously be considered as factors in hay-fever. On the other hand, those that constitute the primary cause of early spring hay-fever have inconspicuous flowers, frequently in pendent catkins, are without scent and rarely receive the attention of insects.

It is not safe to say that only wind pollinated trees can cause hay-fever. Trees not perfectly adapted to insect pollination may at times become a potential menace to hay-fever sufferers, and this is a measure of the perfection of the adaptation of the trees to insect pollination.

The TOOTHBRUSH IS IT A MENACE?

By
William M. Gardner



The upper two brushes can be easily cleaned and dried. The third brush is so constructed as to make cleaning and drying almost impossible. This type does more harm than good.

THE toothbrush has always been intimately associated with the oral hygiene movement. With it, an attempt is made to bring about the same cleansing action on teeth and the same stimulating action on gums that a hygienically correct diet brings about. In other words, by the use of a toothbrush atonement is made for the insults offered to dental tissues by our unhygienic dietetic habits. If used correctly, the toothbrush will cut down the incidence of decay markedly. In preventing gum tissue disease it is more successful, not only maintaining health but materially aiding in restoring health to broken down tissues.

Brush Needs Proper Care

While the oral hygiene movement has adequately emphasized the care of the teeth it has not sufficiently stressed the importance of proper care of the toothbrush.

A toothbrush not properly cared for not only fails to bring about effective mechanical cleaning but defeats the very purpose for which it is used. Many new toothbrushes of good quality are quickly ruined by improper care. Unfortunately, they are not then thrown away but are used for months in a worn-out condition. A few simple rules, easily and painlessly introduced into our mouth hygiene regime, will not only lengthen and maintain the efficiency of a brush but will help to overcome some of the disadvantages of the bristled brush.

A new brush should be placed in a strong, cold salt solution for at least two hours before using. This procedure will set and clean the bristles, take away their original harshness and bring out the desired flexibility and pliability.

To boil a new brush in order to sterilize it is incorrect, because boiling destroys the flexibility of the bristles, deadens them. If the handle of the brush is of celluloid or a material of similar composition, heat will distort it; if of bone, the cement used to cover the wires holding the bristles will disintegrate. Every toothbrush of good quality is sterilized for at least twenty-four hours by formaldehyde fumes before it leaves the factory. In the manufacture of the brush each process is so conceived that the flexibility of the bristles is not impaired. This work should not be undone by boiling the brush. A lifeless bristle means a worthless brush.

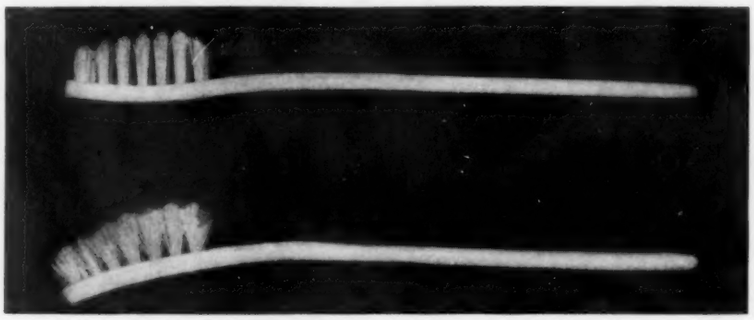
Cold water only should be used to moisten a brush before using. The use of hot water for this purpose temporarily destroys the flexibility of the bristles, impairing their efficiency at a time when it is most needed.

Cold Water for Rinsing Brush

The brush should be rinsed thoroughly after brushing by holding it under a cold water faucet, from which the water comes with considerable force. It seems to be a popular notion that to hold a brush under the hot water faucet will sterilize it after use. To sterilize a brush by heat it would have to be boiled at least ten minutes. To accomplish this sterility by means of hot water from a faucet would necessitate holding the brush under the faucet for even a

longer period, because the water would be below the boiling point. The cleaning of a brush after using is only a mechanical washing away, which can be accomplished by cold as well as by hot water, without impairing the flexibility of the bristles.

As much water as possible should be shaken from the brush before it is hung up to dry. This is accomplished by sharply rapping the brush against the palm of the left hand. If the brush is kept in a glass tumbler the bristled end should be up.



Boiling a brush to sterilize it results in distortion of handle and loss of flexibility of bristles. The photograph shows a brush before and after boiling.

A brush should not be kept in a toothbrush container. Contrary to public opinion, the toothbrush container not only destroys bristles and prevents drying but actually encourages bacterial growth. In many cases the toothbrush container is never washed and is actually a source of infection for the brush.

For purely mechanical reasons, a brush should be allowed to dry for twenty-four hours after using. By this means the bristles will regain their original and necessary stiffness. Every person should be equipped with two brushes, one for morning brushing, the other for evening brushing. Supplementary brushes should be used if teeth are also brushed after meals.

Brush Needs 24 Hours to Dry

Allowing a brush to dry for twenty-four hours after using serves another important purpose. A brush once used becomes infected. The bacteria found in every mouth are lodged in the bristles, all of which cannot be removed by rinsing, by a mechanical washing away. For this reason an accusing finger has been pointed at the brush and it has been called a menace.

The bacteria that are normally or abnormally present in the mouth need for their growth and proliferation an environment that has moisture, darkness, food and a temperature above 97 F. When the brush is removed from the mouth it contains organisms that in the main need this environment. If a brush is allowed to dry completely, those organisms needing moisture will die; the light, room temperature and the want of food will eliminate most of the remaining ones. By actual laboratory tests more than 99 per cent of the bacteria have been thus eliminated.

The anaerobes and specks of dust that may alight on the brush from the air are as harmless as the ones we breathe. The mouth breather no doubt inhales into his mouth more anaerobes and dust in five minutes than a brush collects in twenty-four hours.

One New Brush Every Two Months

A pair of brushes of good quality used once a day will do efficient work for about four months. A new brush should be procured every two months and the older one of the pair thrown away.

The oral hygiene movement must preach the gospel of well kept brushes as well as well kept teeth. It must condemn filthy and worn out brushes because their use is not only a waste of time but may constitute a menace, defeating the purpose for which a toothbrush is used.

Fatigue from Imperfect Hearing

By Dana W. Drury

EVERY normal human being possesses at birth a sense organ—the ear—so completely developed that it not only begins operating immediately as a channel for the reception and transmission to the brain of external stimuli but it has such range and acuteness as to make it a striking example of the bounty of nature. That impairment of this hearing power should be an inconvenience is readily understandable; that it may make so large a demand on the nervous energy as to be a source of serious fatigue needs personal experience or observation to be appreciated fully.

The Subconscious Directorate

In a well balanced and duly coordinated human machine, the many processes of daily life are under the control of a subconscious directorate, which apportions an adequate expenditure of motive power and nervous energy. However, when the balance of the human machine is impaired or the coordination becomes imperfect in any way, an additional expenditure of energy is required to substitute or compensate for the impaired function.

So long as this requirement falls within the limit at subconscious disposal, substitution may be made by increasing some forms of expenditure at the expense of less important forms or by limiting all forms and thus creating a contingent reserve. Beyond this limit, expenditure can be made only by the conscious effort of the will. Although if long continued this may become a habit, it will none the less be a draft on the daily income of vital force and will surely be recorded by some physical reaction.

The experience of an ill-fitting shoe, of a maimed finger, brings at once to our consciousness the necessity for this substitution and compensation, together with the recognition of an unusual expenditure of nervous energy; while the temporary lessening of tactile sense in the finger tips on a cold morning in the country may be a wholesome lesson in gratitude for the bounties we possess but learn to disregard because they grow familiar to our daily use.

But, although it is of more serious consequence, we are less apt to notice an upset of those complicated laboratory processes by which we live and move and have our physical being. The lame, the halt and the blind appeal without words to our sympathy and we readily do what we can to supplement their own compensatory efforts; but there are other less evident disabilities quite as needy of help when once their wants are understood.

A person possessed of a reasonably perfect bodily machine can hardly appreciate the handicap caused by imperfections in that machine. Only the sufferers themselves or those whose business it is to study imperfections, effect repairs and suggest compensations, can realize the full cost in nervous energy to overcome an obstacle to perception. A limitation, therefore, of any of the channels of communication—sight, hearing or touch—by which the human being maintains relation with its environment necessitates an adjustment to the new condition, which is accomplished by utilizing in a compensatory way other means of communication. This conversion of one force to help out another that is in difficulties inevitably gives rise to that complex of symptoms called fatigue. It seems worth while to give attention to the particular fatigue caused by deafness.

Every One's Ears Become Fatigued

Even the normal ear is subject to fatigue. This can be demonstrated by striking a single note on the piano followed by a chord containing that note. The chord will not sound as

it should, because the note that has been struck twice will be less prominent than usual, the ear being fatigued toward the particular vibrations that compose it. There is, then, a successive contrast in auditory sensations analogous to visual successive contrast, by which our perception of every sound is colored by the sounds preceding it. This fact, as will be shown later, makes things all the more difficult for the person who is deaf.

Do you realize that for the person who is hard of hearing three distinct brain processes are required to hear what you hear without the least conscious effort? The fatigue that results from this extra effort often leads to overstrained nerves.

Because the normal ear has nearly double the hearing power necessary for ordinary uses, one-half the total power may be lost in each ear without serious inconvenience. Beyond that point, however, a distinctly appreciable effort must be made to hear. As a result of disease or of changed tension in the transmitting apparatus of the middle ear, sounds may be so altered or decreased as to make them unfamiliar and needing explanation by actual mental process; and the total, or even partial, abolition of hearing in one ear may cause confusion as to the direction of the sound source.

This is the case because the head casts a sound shadow, as it does a light shadow. If one ear hears imperfectly, there will be a marked difference in the perception of a sentence according to the direction from which the sound comes. This may not merely be a source of embarrassment but a serious demand on the nervous energy in the effort to keep the concept of the sound picture true.

For the totally deaf, and even for those who have only a marked impairment in hearing, another sensory channel may be called on for help in the emergency. This supplementary channel is, of course, sight. But here again the afflicted person is called on for a further effort. Lip-reading is rendered difficult by the fact that although the vowels—the threads upon which speech is strung—are not alike, the consonants are similar in force and musical value and in muscular formation.

Confusion arises especially if the person has partial hearing. For instance, if there is a thickening of the drumhead, a progressive middle ear disease, the patient will hear most readily the consonant sounds that require most muscular force in their production, such as t, d, p, b. These resemble each other in tone value and are all formed in the front of the mouth. Much as these four consonants differ in projectile and pneumatic value, nevertheless a moderate degree of obstruction in the ear serves to level the difference, and these consonants of markedly distinctive meaning sound almost alike.

An interesting illustration of this fact occurred in early telephone experiments. The thick iron plate then used as sound receiver was comparatively immobile, causing so great an obstacle to the short sound waves of t, p, b, d in a spoken sentence that each sounded to the listening ear only as a dull thud. The present thin ferrotype disk remedied this defect, just as a normally sensitive ear drum would enable sounds to be differentiated accurately. These consonants are the first to be studied in lip-reading, as their proper recognition is necessary before further progress can be made.

The other consonant sounds having the greatest force-value, such as k and g, are formed in the back of the mouth, and are accompanied by a less easily recognizable facial expression than the frontal consonants. F, l, m, n, the consonants with the least force-value, resemble in facial construction the harder consonant sounds of almost the same musical value. It thus comes about that the deaf person will often mistakenly substitute in a sentence a hard consonant for the soft one most nearly resembling it.

The Three Demands on the Deafened

Lip-reading, then, although to the appreciably deaf person it eventually becomes more or less habitual, is another source for expenditure of nervous energy in the effort to see as well as hear. In the higher degrees of imperfect hearing the effort to see and the effort to hear combined are inadequate to present to the mind the complete spoken sentence, since there remain gaps in the array of consonants, which

Two classes of speakers are regarded with dread by the hard-of-hearing. One of them is the slovenly speaker who articulates imperfectly. The other is the uneven speaker who rises to the fulness of his vocal capacity and then sinks to a whisper.

must be filled from the context. Our perception of each sound is colored by that preceding it. If one is perceived incorrectly, the next is the more likely to be wrongly interpreted. In any given sentence, certain consonant sounds are distinctly heard, others are imperfectly heard, others are detected by sight, and still others must be inferred. Each sentence thus assumes the proportions of a puzzle to be solved, being a third demand on the nervous energy in addition to the effort of seeing and hearing.

In other words, ordinary communication with his fellow men demands of a person of imperfect hearing three distinct brain processes to achieve what is normally accomplished without the least conscious effort, and the resultant fatigue may be justly estimated as an important factor in many of the cases of nervous overstrain.

Still another demand on the strength and endurance of the person of imperfect hearing is incident to the fact that an obstruction that hinders the passage of sound in one direction will equally hinder its passage in the opposite direction. This obstruction will interfere with the normal passage outward of all those sounds consequent on the activity of the human machine: sounds made by the contraction of the muscles, sounds incident to the movement of joints, and, more especially, the friction sounds made by the blood flowing in the blood vessels large and small, tones of low pitch for the former and of high pitch for the latter. Whether constant or intermittent, monotonous or variable, these circulation sounds are no light thing to reckon with in the adjustment of the compound tone picture to the uses of the day, and in their turn make a demand on the energy, expressed in judgment and self-control, of one who would keep the even tenor of his way.

Difficulties in Interpreting Human Speech

Of all the external sounds that the ear is capable of receiving and translating, those of the human voice are most pregnant with meaning; yet they are often the most difficult to interpret. When that which is at best to the hard-of-hearing a distorted sentence becomes further disfigured by imperfect and uneven utterance, the burden imposed by misfortune is made still more heavy by the needless carelessness of those who instead might help to lift it.

To the person who through imperfect hearing has a distinctly limited relation with his fellow men, there are two classes of speakers to be regarded with dread: those slovenly speakers who articulate imperfectly; and those uneven speakers who, in a single sentence, rise to the fulness of their vocal capacity and then sink to a whisper. The slovenly speaker demands of his hearer an acute attention and liberal translation, while the billowy lecturer demands an effort such as a lame man must put forth to keep his footing in a rocking boat.

One of the most effective helps that we can render these fellow travelers who find the fatigue of their deafness a daily load, is gentle speech, well chosen, well modulated, of an even tenor, and, above all, articulate. When it is necessary to increase the voice volume, this should be done with due regard to the evenness of tone and the distinctness of articulation. To those who can receive only that which is ministeringly brought to them, to whom the once accustomed volume of the sound of life has become pitiably diminished, let us bring with gentle mien, carefully, patiently, the best that we have to offer.

While there are no apparent wounds to bind, there are gashes in the spirit and inroads on the strength of the person who hears imperfectly that make it incumbent on us to halt a little in the hurry of the highway and give aid.

The majority of human handicaps are more evident and better understood than is the impairment of hearing, which, with no outward sign of disability, may first be recognized when it becomes an obstacle to the ordinary conduct of affairs. Too often the result is a condemnation of the unfortunate person, who finds himself thrust aside because he is apparently too slow to comprehend, or rebuffed because his infirmity demands of others too great an effort to try to maintain ordinary communication with him.

Daily experiences of this sort, coupled often with disappointment in the effort to live usefully and to be self-sustaining, bring about a sense of isolation and imprisonment, adding much to the fatigue and incident depression of the pitiably deaf.

Let us try to remember this load of fatigue, both nervous and physical, which the sufferer carries; let us realize his constant expenditure of straining effort in order to maintain even a semblance of that freedom of communication which to those not afflicted is both unconscious and effortless. While there are no apparent wounds to bind, there are gashes in the spirit and inroads on the strength of our fellows who hear imperfectly, which make it incumbent on us to halt a little in the hurry of the highway and give aid.

Virginia Van Wie, the golfer, is also an archer.

Wide World

ARCHERY

By George H. Dacy

DURING the past few years, a remarkable revival of interest in the ancient sport of archery has taken place in all parts of the country. School girls, in particular, as well as elderly folk who find golf, tennis, horseback riding and hiking too vigorous, have turned to bowmanship as a conservative and healthful form of exercise.

Archery is one outdoor diversion that one is able to enjoy either in isolation or with companions. Hence it is a sport that the suburban dweller who owns a lot can practice and enjoy at home. It is a pastime that will entertain large groups in public parks without requiring more space than three or four tennis courts would occupy. Archery equipment is readily portable and can be set up wherever there is a plot of ground suitable for range shooting.

Game Need Not Be Expensive

The archer's equipment can be home made or the costly products of a sporting goods store. Many archers delight in making their bows and arrows, a woodcraft industry that demands painstaking work. Bows are made of lancewood, lemonwood, osage orange, yew, amaranth and many of the imported tropical woods. Arrows are shaped from slabs of white birch, spruce and Norway pine. Bowstrings are contrived by amateur fingers from the best grades of linen thread. Targets are manufactured from 4 to 6 inch coils of rye straw bundled together and stitched securely. Rye straw is the best for this purpose because it is soft enough to hold an arrow yet hard enough to be durable.

Archery brings people of sedentary habits out into the fresh air and sunshine. It is surprising to find the large number of American archers who are interested in no other form of physical play and who were it not for archery would spend most of their leisure hours indoors.

The modern archer can frolic with bow and arrows in a variety of ways. If he tires of shooting at targets, he can drive in his motor car to neighboring woodlands, where during the open hunting season he can shoot rabbits, squirrels, quail and other small game.

Archery Golf Gains Enthusiasts

If the new archer happens to be an old golfer, he can enjoy a round or so of archery golf, which combines the best points of each of these popular sports. The archer, like the amateur trap shooter, can shoot at whizzing clay pigeons or descending glass balls if he wishes. If he desires to combine his archery with a cross country stroll, he can add interest to his excursion by carrying bow and arrows and pacing the distance covered by each long flight arrow.

If an archery club is formed in the neighborhood and if the members wish to lay out a simulation of a modern golf course as a sideline to their customary targetry courts, the means, measures and methods are simple and inexpensive. A rolling or level plot of ground is satisfactory. The ranges may vary in length from 150 to 500 yards or more. The take-off for each range should be marked with permanent stakes. Coconuts that have not been husked make excellent targets because the

Comes Back

To ATTRACT both OLD and YOUNG

arrows will stick in them. Bundles of rye straw are best used if coconuts are difficult to obtain.

The archer counts the shots that he consumes in covering the distance from take-off to target. Direction flags are placed on the longer ranges to guide the archers. Usually a course consists of nine or ten ranges. The archer who can cover this course in the minimum number of strokes wins the match. These courses are becoming popular because they add the beneficial exercise of tramping to the pleasures of archery.

Archery-golf can be played on the ordinary golf links by substituting metal rimmed paper covered disks as targets on each green. In a number of golf courses one afternoon a week is set aside for archery-golf matches. The promiscuous use of the golf courses by both archers and golfers, however, is dangerous, as a golfer searching for a lost ball just over the hill is liable to be hit by a speeding arrow and perhaps badly injured.

Philadelphia Revived Ancient Sport

Organized archery made its bow in the New World in 1834, when the United Bowmen of Philadelphia celebrated the first tourney. From that time until the present, the royal sport of archery has written continuous history in the United States. Today there are forty organized archery clubs throughout the country. Thousands of business men, bankers, butchers, bakers, doctors, lawyers, clergymen—and their wives—are experienced archers and during fair weather foregather at their clubs or public courts for contests and tournaments.

Last year, the annual championships of the National Archery Association in Boston brought together 175 skilled bowmen from all parts of the country, the largest entry in the history of American archery.

In making the rounds of the leading resort cities of Florida during the winter I came across archers from all parts of the United States and Canada enjoying their prized recreation in the warm southern sunshine, so it seems that American archers like golfers and baseball players go South during the winter to enjoy their favorite outdoor amusement.

Washington as an Archery Center

The nation's capital is an archery center of parts. There more than 500 archers annually use the three grounds that Uncle Sam has set aside for the purpose. One archery course is laid out in the shadow of the Washington monument; another has been established near the famous Smithsonian Institution, while a third is reserved for public use in Rock Creek Park.

The Potomac Archers, one of the notable clubs, is composed of government executives, scientists and clerks, as well as lawyers, doctors and business men of Washington. This club, which was organized during the administration of President U. S. Grant, has produced some of America's champion archers, bowmen who rival in skill, science and shooting accomplishments the early English archers and the members of Robin Hood's notable band.

The Potomac Archers club was organized as a result of a friendly dispute that occurred in the U. S. Patent Office concerning the proper method of stringing an arrow and handling a

long bow. Patent examiners were arguing over the matter when an army colonel skilled in bowmanship chanced to pass. He suggested that the disputants accompany him to his home where he could show them how to handle the archery equipment. This was done and the men became so interested in the sport that the Washington club was formed.

American Archery Champions

L. M. Maxson, one of the original Potomac Archers, a man of powerful physique, who had rowed on the Yale crew, subsequently developed such skill that he won the all round archery championship of United America, a distinction that he held for ten years. His long flight shot of 290 yards was the American record for distance shooting for more than a quarter of a century. Three years ago Prof. C. D. Curtis of South Dakota bettered this record by a shot of 304 yards. Professor Curtis used both legs and arms in making his record, lying on his back and pressing outward with his feet against the bow as he pulled the bowstring with his hands and sped the arrow on its record flight. During March, 1928, Howard Hill, professional archer of Opa Locka, Fla., shattered all long flight records with a master shot of 396 yards.

One of the Potomac Archers recently perfected a new method of securing scientific specimens by use of bow and arrow. This entomologist, on his way to an archery match, noticed a crowd of people watching what seemed like spiral columns of smoke ascending from a group of linden trees that stood on government land. The scientist stopped his motor car and joined the throng. Immediately, he discerned that swarms of insects were the cause of the phenomenon.

Naturally, his scientific interest was aroused and he wished to secure specimens. This appeared impossible as the insects swarmed above the linden trees some 90 feet off the ground. The entomologist thought of his bow and arrow and the possibility of smearing the arrow with liquid glue in order to snare specimens. He hurried to his laboratory, coated the feathers on the butt ends of a half dozen arrows with glue and then returned to the linden trees.

Collecting Specimens by Bow and Arrow

Several shots were required before he could obtain the coveted specimens. He shot the arrows through the swarms of insects so that some of them stuck fast on the glue-coated feathers. Most of the insects were jolted from position when the arrows struck the hard ground and these were lost. Enough remained, however, for scientific study. The specimens were forms of unidentified gnats.

Boy and Girl Scout troops throughout the country are increasing the general interest in archery. These youngsters are learning bowmanship under competent instructors and are developing interest in archery among their parents. One of the most cherished insignia of the Boy Scout is that of master archer.

American school girls are becoming skilful archers. Most of the women's colleges have taken up the sport.

National Photo

E. B. Powell is one of America's strongest archers. His bow has a pull of 105 pounds. In the photographs above he demonstrates (1) the correct stance in archery; (2) the approved method of removing an arrow from the quiver, and (3) the way to string an arrow. Note the leather arm guard worn by archers.

American archers consider themselves fairly adept bowmen when they can score 200 in a contest in which each archer shoots thirty arrows at a 4 foot target 40 yards distant. The archery target is divided into five concentric circles. The central circle or bull's eye counts 9, the net circle, 7, while arrows in the three other circles score 5, 3 and 1 respectively. The majority of the archer's arrows must stick near the bull's eye if he is to make a total score of 200 in such a target contest.

Robin Hood's Record Unequaled

Tales of Robin Hood and his band relate that these superarchers practiced daily in shooting at peeled willow wands 2 to 3 inches in diameter placed from 75 to 100 yards away. Robin Hood ridiculed the poor marksmanship of his mates unless they could hit these curious targets in three out of four shots. Neither the American Indians nor our modern white bowmen have attained such skill in sharpshooting.

Robin Hood's band was composed of powerful men who pulled mighty bows. Some of them were reputed to handle bows with a pull of from 100 to 125 pounds. The average archer today uses a bow with a pull of only 50 or 75 pounds. The strongest archer in the United States, Howard Hill, handles a mighty bow with a pull of 150 pounds.

In the Tower of London, the head of an arrow is embedded 4½ inches in an oak door. It has remained there for centuries, having been shot by a sentinel at a prisoner who attempted to escape. The arrow missed its mark and sank deep into the huge door. It has been preserved there as a relic demonstrating the great power of the early English archers.

Many breastplates and coats of mail in British museums are pierced with holes made by arrows. The Spanish explorers who first visited our shores battled on various occasions against the Indians. The Indians, using flint tipped arrows, shot holes in their coats of mail.

The American Indian shot his bow and arrow by instinct and never acquired skill in marksmanship by scientific practice. Indians as a class have never made good records in target shooting. But give them an unexpected close range shot at a rabbit or a quail, and it is "Good-by, wild life."

Hunting with Bow and Arrow

Our Indians were skilled at stalking game. Stealthily, they crept up to within 25 or 30 yards of their quarry and then felled the birds or beasts with silent arrows. They never made any remarkable records in long range shooting. One particular advantage of the bow and arrow in hunting is that these weapons are noiseless. Frequently, the archer-hunter takes two or more shots at the same animal before it flees, something unheard of when shotguns or rifles with their explosions of gunpowder are used.

"I never saw a more beautiful sight than he was as he lay in his casket."

Blessed Be Some Callers

By Dorothy Blake

IT WAS my first day of sitting up in bed. Five pillows arranged like an arm chair, girl scout fashion, made up for the jelly-like consistency of my back bone.

In spite of the prickles in my feet, the world looked wonderful. It does, you know, the first time you can look it in the eye, after weeks on a horizontal plane. I discovered that the trees had trunks as well as waving tops, and I found out for myself what the nurse had long told me, that the golden, shimmering shadows on the ceiling were the reflection of the golden, shimmering ripples on the lake below the bluff.

Perhaps you can imagine my delight if you have ever been the inspiration of a hospital chart and have had a sign on your door, "No visitors allowed."

Exposed to Sympathy

But the sign was now off the door, and after weeks of impersonal care I was exposed to sympathy.

My first caller was a dear old lady with a heart of solid gold and a head of solid ivory—when it came to the sickroom. She could lay out the deceased, she told me so herself, so that "they'd look just as natural as you do this minute." After that I did not feel nearly so natural as I may have looked.

She rambled on about the hospital smell, and did I ever notice it? "Sort of sickish sweet, don't you think? Reminds me of an embalmer's, some way. Never could stand the smell of ether since my sister's oldest boy passed away on the operating table. Never saw a more beautiful sight than he was in his casket."

The time had come when every good nurse should come to the aid of her patient. Mine did. When I enter the pearly gates, if I ever do, I know St. Peter will look no more heavenly to me than the stern and rockbound visage of my Miss McGregor. She peered through the half-open door. I gave as good an imitation of a faint as ever a genteel lady pulled on a mid-victorian world. My first caller was eased out. I heard her voice echoing down the sound-proof corridor:

"Looks fine, doesn't she? But I was just going to tell her I once knew a woman———"

I never did know the life story of that woman. I didn't care to know. We live but once, and why die a hundred vicarious deaths?

After I had come up for air I told my nurse I wanted no more visitors, sign or no sign.

"Oh, yes, you do," she asserted brightly, "you need company now to cheer you up."

Few Visitors Succeed in Mission

Then I began thinking, a bad habit of convalescents, about sickroom visitors. They all come with such good intentions, such kindly feelings, such real desire to "cheer you up." How few of them succeed. How many of them take away more strength than they bring. Is it tactlessness or lack of imagination? I know it is not intentional unkindness. But to the person who is weak and depressed a visitor is so often a real ordeal instead of a comfort.

My next day's caller did cheer me; not by what she said, but by what she was—the best sport I ever saw. She has five children to my one. She has want to my plenty. She has a husband that should be listed with "shedder crabs and other bait," while I have the best on earth. Yet I never saw her without a smile—not a "behold what a sweet nature I have"

smile that makes you want to reach for the nearest small fire-arm, but a smile that starts a glow in your toes and spreads clear through you until you are smiling yourself.

"Isn't it nice," she said enthusiastically, "that you are going to get out home in the spring? Just the right time to blossom forth in new clothes. Did you know they're wearing smocks? You'll look adorable in a lavender one, fussing over your tulips and roses."

She hasn't had a new dress in several springs and her third floor apartment window box is all the garden she owns. But what a breath of interest and vision she brought into that hospital room. I had almost forgotten such things as clothes and gardens. I was too weary to call them back for myself. Now all at once I was on a fresh adventure of imagination. Blessed be callers or, rather, blessed be some callers.

Then Came a Regular "Glower"

For into my germless cell came next a perfectly healthy woman, a regular glower. She was so full of energy that she made me feel deflated. You knew at a glance that she always took a cold bath before breakfast.

Incidentally, in her radiant spirits, she kicked the bed three times. My case was what is known as a "major abdominal," and bed-kicking did not add to my comfort.

"You're looking well," I remarked.

She was off.

"I'm feeling well," she said decidedly; "never felt better. I'm doing the new setting up exercises to music; you know, the ones that Danish gymnast is giving. Here, I'll show you."

"I chust love a good wash day."

Then it was, "one, two, three, lunge," with appropriate gestures, "four, five, six, hold," until my caller was breathless. I was speechless. I didn't want to jump back into life in any such Douglas Fairbanks manner. I wanted to go back by gradual and pleasant means, a foot here and a foot there, until I found myself quite beyond memory of the shadowy and unreal life I had been leading.

When she said her last breezy good-by I needed no cheering up; what I required was lifting up.

A few days later I was sitting in a chair by the open window, idly dreaming of spring and home and the baby. How dear it all seemed.

"I'm doing the new setting up exercises to music."

I vaguely thought of myself as mistress of that home, mother of that baby, but the feeling of actual responsibility was still quite beyond me.

Mrs. Arnold was announced. She is what is known as an excellent housekeeper. This is an admirable trait in its place, but its place is in the home. However, Anne Arnold did not agree with me on that point.

"How's your maid doing with you away?" she queried.

"I don't know especially," I said. "John says everything is going well."

"Well, you are lucky if it is. What in the world you would do in your condition if she left, I don't know. I've just let my third go this month. Absolutely no good unless you stand right over them. My icebox was so dirty, it's a wonder we all haven't been poisoned. And the price of food! It's terrible! And the way they waste! Actually I'm half dead trying to keep a decent house without going bankrupt. The bridge club meets with me next week too. What shall I serve? Think you'll be ready for your turn? That's just two months from now. Of course you'll have to do a lot of cleaning when you get home. No maid keeps a place up as it should be."

Life Becomes Too Difficult

Tears of weakness filled my eyes. Life all at once seemed so overwhelming, the problems so difficult.

Mrs. Arnold looked at me in amazement.

"Why, what have I said now? I was only trying to help you get in touch with things again. You've been away so long." She was so confused that I had to laugh through my tears.

We parted on pleasant terms. But why will friends drag in their burdens and dump them on the lame, the halt and the blind? I had always liked Anne Arnold but at that moment I never wanted to see her again.

When, a few days later, Miriam Black came in, I had at least the preparation of expecting the worst. Miriam is always riding a hobby of

some sort, and she rides it to death. When I am in the possession of my full strength and faculties, she amuses or stimulates me. But she's like strong drink: it takes an iron constitution to stand her.

When suffrage was new and controversial, Miriam went for it with all her ardent spirit; then it was the child labor law and the tales she told of children in mills and coal mines would chill the spine of a Hottentot. Later she was all for the government preservation of national shrines, but the day she burst into my hospital room she was steamed up over surgical clinics for the needy. "What is a home without an operation?" seemed to be her slogan. Glad as I was to see her friendly face, it was a blessed relief to see her go.

But, lest you think I am a confirmed grouch, I must tell you of a visitor who left me with wings on my spirit and a song in my heart.

It was my Polish laundress, a woman with more real troubles to the square inch than I have to the square mile. She brought me four snowy white eggs from her own "schickens."

"Oh, Mis' Blake," she beamed as she grasped my hand, "the house looks chust so nice. Mattie keeps good care of the baby, too. He's the cutest leedle fellar. I done up all the ruffled curtains by the house so it should look clean when you come home. Such nice wash days we been having. All sunny and good. I chust love a good wash day."

And then, as she was leaving, the old familiar farewell she had called cheerily for four years.

"Well, so long, I must beat it. And Gott bless you."

Homely fare, but how nourishing to a weakened spirit.

Hadn't she, after all, the ideal tone for the sickroom visitor—pleasant news from home and the world at large, thoughtfulness, no demand on the alertness of a brain too tired to think, and, at the finish, a sincere "God bless you," which we all need?

A Parody on "Care and Feeding of Children"

By John C. Emery

(With apologies to the late L. Emmett Holt, M.D., and with assurances of good will, since the writer's two youngsters have been reared according to Holt.)

DENTITION

How many teeth are there in the first set?

Twenty; just think of that when Junior starts to howl over his first one.

What is the time of their appearance?

About 2 a. m., or just when the parents are getting soundly to sleep.

What symptoms are commonly seen with teething?

My dear, the child is simply impossible.

How long do these symptoms last?

Much too long.

FOOD FOR HEALTHY INFANTS

In deciding upon the food for healthy infants, what are the points to be determined?

Anything to keep them satisfied, anything to keep them satisfied.

Which is the most important?

Anything to keep them satisfied.

What happens if too little food is given?

You'll hear about it.

What happens if too much food is given?

You'll see.

How do we know how much food a healthy child needs?

You will readily be able to get an expression on that subject from the child.

Is not the age also important?

Well, they make more noise when they are older.

Does the child's activity affect his need for food?

His vocal activity usually effects the filling of his needs.

How should the bottle be prepared at feeding time?

By the father, after the fourth request of the mother.

How may the proper temperature of the milk be determined?

By pouring a drop or two on the wrist or by saying, "Oh, that's warm enough."

In what position should an infant take his bottle?

It does not make much difference how he starts out, he'll be changing around several times before he is through, unless you anchor him.

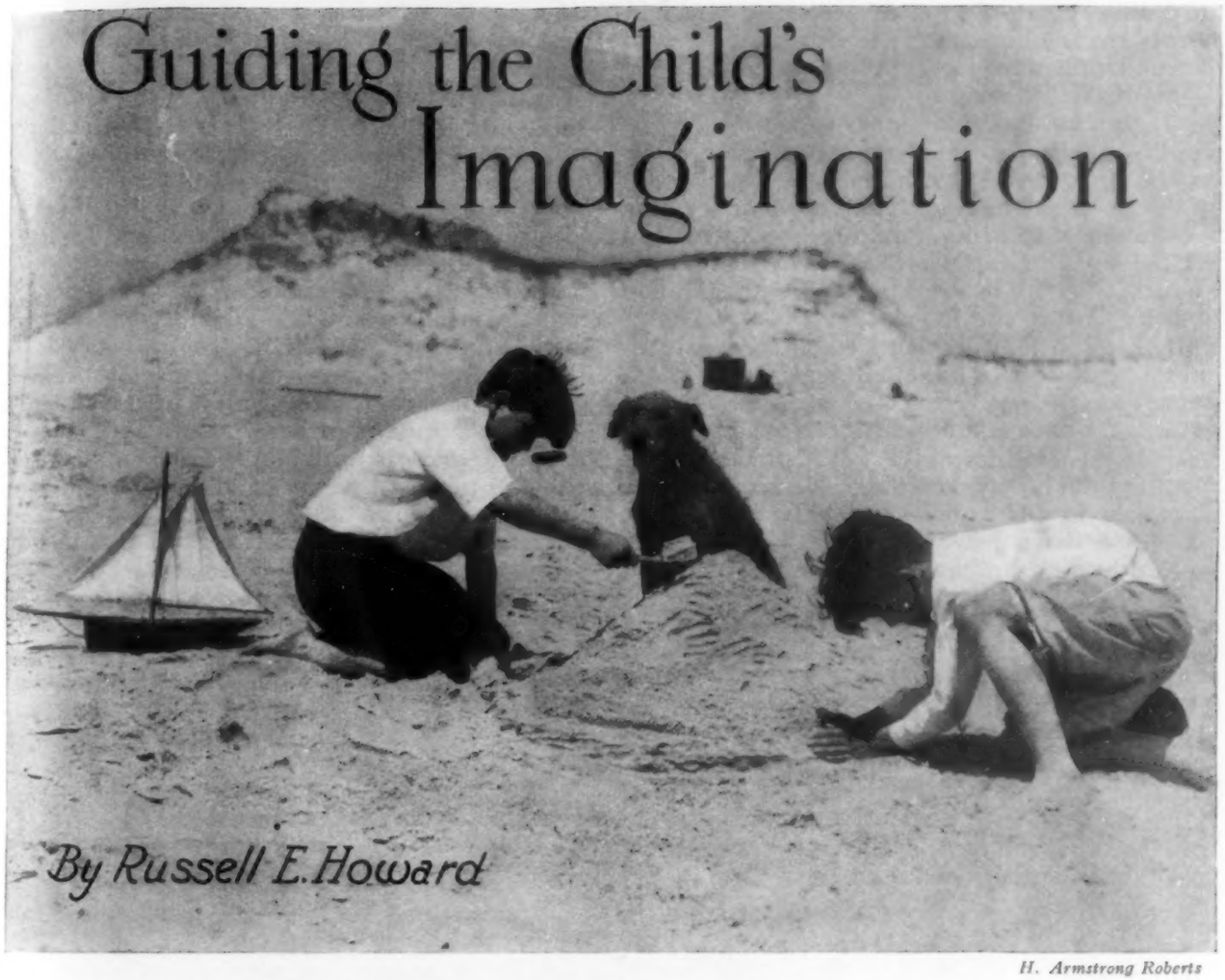
How much time should be allowed for one feeding?

Long enough to make the parent late for whatever he or she is going to.

How can a baby be taught to be regular in his habits of eating and sleeping?

I ask you!

Guiding the Child's Imagination



By Russell E. Howard

H. Armstrong Roberts

Building castles in the sand has been known to lead to building houses and offices in adult life, all because a child's imagination was properly guided.

SAID Mrs. Burns in an exasperated tone to her neighbor, "Bob came in this morning and told me that he had seen Indians hiding behind the trees out in the yard. The very idea! I shall most certainly have his father give him a good spanking when he gets home tonight."

Mrs. Smith, who had dropped in for a chat, was not at all convinced that Mrs. Burns had the right idea.

"Perhaps he thought he actually saw the Indians," she suggested.

"Well, I will not have him thinking he sees things that are not there," went on the enraged mother; "I cured him of being afraid in the dark by spanking him and I can cure him of this. Some day he will thank me for making him overcome that imagination of his."

Must Not Kill Child's Imagination

Although Mrs. Burns did not know it, she was doing one of the worst things possible for the mental and emotional stability of the boy. The imagination must not be killed if the emotional balance of the person is to be kept normal.

Recently this question arose in the psychological laboratory of Colgate University. The idea had such great possibilities that one of the seniors, William N. Wright, investigated this phase of child life. He made studies of several hundred persons and arrived at the conclusion that a healthy imagination is an important factor in keeping one sane.

Tracing Imaginational Growth

During the investigation he sent questionnaires to the parents of hundreds of college students, asking questions about the childhood of the boys and about imaginational growth.

Many phases of the imagination were found in the boyhood lives of these students. Some of them had been given to thinking they were wealthy, others saw giants, found everything more beautiful than it actually was, or imagined they were grown up.

Johnny, who used to make mud mounds and see castles in them, is now on his way to being

an architect. He had always seen towers and turrets rising above the sand box, and his parents had guided his imagination, which is totally different from killing it.

Imagination is the kingdom in which most of childhood is spent. The girl is the housekeeper and has an entire home bounded by the border of the living room rug. The boy bandages the broken leg of his chum, or together they storm the heights and capture the fort of the enemy. To forbid the use of these powers of imagination is to take away childhood.

Students who were subjects in the investigation were tested for emotional stability. In more than 75 per cent of cases in which parents had punished the child for seeing things that did not exist, or at least did not exist in the form in which they saw them, the score was on the unstable side of the sheet. The more stable the score the more the imagination had been guided into useful channels by the parents.

The child who has a good imagination and then is allowed by his parents to use it to such an extent as to cause fear is also unstable. Reasoning with the child and showing him that, although he may be sure he saw a thing, it could not have been, is to direct the child's imagination into another field. By suggestions and leadership the parents can teach the child to control this great power and often to develop its possibilities for the future.

But the child who sees Indians in the garden is as truthful as many of his elders. Daily we read examples of the sworn statements of witnesses that disagree in even the vital points. The imagination is always alert to create something more than is present. The civilization of the modern world is based on the imagination and the person who lacks this important item in his make-up is apt to find a safe home in a hospital for the insane. It must be trained to serve the best interests of society.

More Healthful Office Conditions

PRIZES in the HYGEIA letter contest on "How I'd Make My Office More Healthful" have been awarded to Miss Laurie Massey of Atlanta, Ga.; Miss Marie C. Hoglund of Foley, Minn., and Miss Mary T. Roberts of Victoria, British Columbia.

Of the numerous letters that were submitted from office employees, the subject of office ventilation seemed to be mentioned oftenest and at greatest length. Apparently sufficient attention is not paid to this important factor.

Miss Massey's letter, indicating most of the points brought out in all the letters submitted, is as follows:

HOW I'D MAKE MY OFFICE MORE HEALTHFUL

HAVING spent the greater part of my days in an office, I feel that should I ever become "boss," I would put into practice the following suggestions, which to me are not only timely but necessary, if those who, like myself, must spend perhaps six days of each week in an office, are allowed to live the full time allotted to them.

1. The atmosphere would be pure. Before the office force arrives, all windows would be opened and fresh air allowed to circulate through the rooms. This would be done again during the day.

2. The heat would be regulated, kept at an even temperature and with no drafts.

3. In summer oscillating electric fans would be provided, run at low speed.

4. Fresh water and sanitary drinking cups would be supplied daily.

5. Well equipped rest rooms would be provided, with towels for each employee. Cots or lounges would make it possible for employees to take a short rest or perhaps a nap at the noon hour. There would be comfortable chairs in which to relax.

6. Glaring lights are criminal. Inverted ceiling lighting would be used; it is restful to the eyes and is well distributed.

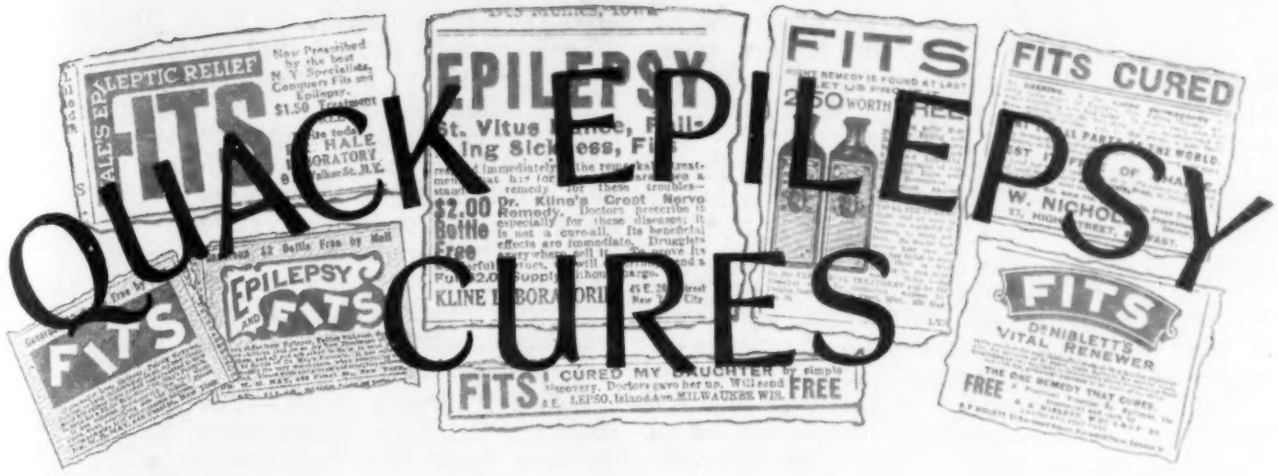
7. The walls would be of a soft, pleasing color; the color or pattern often is such as to get on one's nerves.

8. Desks, neither too low nor too high, and a comfortable cushioned chair for each desk would be a part of the office equipment.

9. The social atmosphere of an office has more to do with successful work than any other one thing. A pleasant "Good morning" from the "boss" would be my salutation. "Salutations are like breakfast foods, not much to 'em but fine to start the day."

10. "Speak gently and let thy voice be low." No gossip, idle chatter or unpleasant undercurrent would be tolerated. Loyalty, punctuality and cooperation would replace jealousy, idleness and partiality.

QUACK EPILEPSY CURES



By
Arthur J. Cramp

THE cause of epilepsy is still a mystery. In certain cases the "fits" are due to injuries of the skull, the brain or the membranes that cover the brain—the meninges. Such cases can sometimes be relieved by an operation. Another type of epilepsy appears to be definitely associated with a poisoning of the system—an intoxication. Some who have given the subject years of study hold that true epilepsy is a disease of the mind. One thing seems certain: Epilepsy is not a clear cut condition but includes a certain group of symptoms that differ widely as to their origin or causes.

Individual Treatment Necessary

The rational treatment of epilepsy will naturally depend on finding, if it is possible, the cause in each case, and then removing that cause. Few conditions known in medicine call for greater individuality in treatment than does epilepsy. Even with the best of such treatment, the results may be disappointing. Therefore sufferers from epilepsy fall easy victims to the wiles of the epilepsy cure quack, who, without knowledge or conscience, leads the sufferer to believe that in his secret combination of drugs, he has discovered the long-sought remedy for the condition.

For many years the drugs mainly relied on to control seizures of epilepsy were the bromides. But the bromides must be used with caution. While they will reduce the frequency of the attacks, the bromides will not cure epilepsy; moreover, the long-continued and continuous use of bromides brings about physical and mental deterioration.

Within the least few years a new drug has been used in the treatment of epileptic seizures, phenobarbital, introduced under the proprietary name "Luminal." For some time after it was introduced luminal was supposed to be free from practically all the ill effects that followed the continued use of the bromides. More extended experience proved, however, what has been proved so many times, that any drug that is powerful enough to be of value is also powerful enough to be dangerous. During the last two or three years reports of the harmful effects of the continued use of luminal and of overdosage have appeared in medical literature.

There are on the market a great many quack remedies sold under the claim, either direct or implied, that they will cure epilepsy. None of them, of course, will do anything of the sort. Until the introduction of luminal, practically all of the "epilepsy cures" on the market consisted essentially of bromides. As the use of luminal for controlling attacks became more common among the medical profession, the epilepsy cure quacks began to adopt this drug for their uses. Today, practically every alleged epilepsy cure, sold either through the drug stores or on the mail-order plan, has for its essential drug bromides or luminal. In some instances the quacks use both, putting out a bromide mixture under one name and a luminal mixture under another, and using different company names for their exploitation.

Mixtures Dangerous or Worthless

What follows is a brief abstract of information that has been accumulated by the bureau of investigation of the American Medical Association of the more widely advertised "epilepsy cures" now on the market. The American Medical Association issues a pamphlet which gives in detail the methods of the epilepsy cure quack. It can be obtained by sending 15 cents to the association.

Acoma.—The Acoma Chemical Company, St. Louis, Mo., sold an alleged "specific for epilepsy" known as Acoma. To get what mail-order quacks call a "sucker list" circular letters were sent to the postmasters of small towns, asking them to send in the names of people with

epilepsy. The postmaster was told that he would receive 25 cents for every order placed by those in his list. The Acoma tablets, when examined in the chemical laboratory of the American Medical Association, were found to contain phenobarbital (luminal).

Converse Treatment.—The Converse Treatment Company of Columbus, Ohio, sold its cure on the mail-order plan. One H. E. Sanderson seems to have been the head of the concern. The names of sufferers from epilepsy were obtained by writing to the mayors, presidents of city councils, or justices of the peace of small towns offering a small dictionary for the names of four epileptics, a fountain pen for three names, a cook book for two names, and a song book for one name. When the Converse "treatment" was analyzed in the chemical laboratory of the American Medical Association some years ago, it was found to be a bromide mixture. The company not only kept this fact from the public but led the victim to infer that the stuff contained no bromides by stating that bromides "tend to aggravate the trouble in the long run."

Croney's Specific for Epilepsy.—James T. Croney of Columbus, Ohio, sold an alleged specific for epilepsy on the mail-order plan. The Croney advertisements declared that he "first removes the primary cause of epilepsy and then dispels the secondary causes." What he actually did was to sell a mixture of bromides, a fact that was brought out by the investigation of the chemical laboratory of the American Medical Association.

Dexo.—See "Hunter Epilepsy Cure."

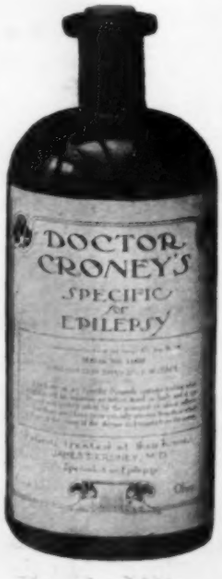
E-Lep-Tine.—The Miller Medicine Company of St. Mary's, Kan., put out an alleged remedy for epilepsy called E-Lep-Tine. The state chemists of Indiana reported that E-Lep-Tine was essentially a solution of bromides in alcohol and water.

Grant's Epilepsy Cure.—Fred E. Grant of Kansas City, Mo., advertised in cheap magazines, especially those circulating in rural districts. The Grant nostrum, when analyzed, was found to be a bromide mixture and the victim who took it according to directions got the equivalent of 70 grains of potassium bromide daily.

Guertin's Nerve Syrup.—The Kalmus Chemical Company of Cincinnati, Ohio, sold Dr. Guertin's Nerve Syrup as a remedy for epilepsy. Some years ago Otto Kalmus conducted a medical mail-order concern known as the Epileptic Institute, which was declared a fraud by the federal authorities in 1908. At that time the government proved that Kalmus' remedies were essentially the bromides, and investigation failed to disclose that any cures had been effected, although some victims were found who had been so seriously affected that they had had to be confined in state institutions. Guertin's Nerve Syrup, when analyzed in the chemical laboratory of the American Medical Association, was found, as might be expected, to be a bromide mixture.

Hale's Epileptic Relief.—The so-called Dr. Hale Laboratories of New York City put out a product called Hale's Epileptic Relief. The so-called laboratory, as is usually the case, was not a laboratory at all but merely a warehouse. When analyzed in the chemical laboratory of the American Medical Association, Hale's Epileptic Relief was found to be another of the usual bromide mixtures.

Hunter's Epilepsy Cure.—One LaFayette M. Hunter of Little Rock, Ark., conducted his crude mail-order quackery under the trade name of Dr. Hunter Laboratories. Both Hunter and the man associated with him (H. S. Brevoort) are legally entitled to call themselves M.D.'s. Both have records as quacks. The Hunter remedy came in the form of a white powder in pink capsules. When analyzed in the chemical laboratory of the American Medical Association, the stuff was found to be about one-fourth luminal and three-fourths milk sugar. More recently the Hunter outfit has used a different trade name—the Dexo Chemical Company—putting out another alleged remedy for epilepsy under the name Dexo. When Dexo was analyzed by the chemical laboratory of the American Medical Association, the tablets were found to contain bromides.



Kline's Nerve Remedy.—The Dr. R. H. Kline Company of New York City put out this product. Dr. R. H. Kline for years quacked it in Philadelphia. When a bottle of Dr. Kline's Nerve Remedy was analyzed by the chemical laboratory of the American Medical Association, it was found to be a bromide mixture, and identical with the product sold from the same address under the name of Dr. Waterman's Tonic Restorative by the Lexington Drug and Chemical Company.

Koenig's Nerve Tonic.—The Koenig Medicine Company of Chicago sold a

product known as Pastor Koenig's Nerve Tonic, which was claimed to be "a Natural Remedy for Epileptic Fits." The stuff was a bromide mixture. Because of the fraudulent claims made for it the U. S. government, in 1917, declared the stuff misbranded.

Lepso.—M. Lepso of Milwaukee, Wis., sometimes advertises his alleged remedy under his own name and sometimes under the name "Lepso Company." Lepso claims to have cured his daughter of epileptic "fits." When analyzed by the chemical laboratory of the American Medical Association, Lepso's nostrum was found to contain bromides in quantities that, in the dose recommended, were equivalent to giving 51 grains of potassium bromide to the dose.

Maghee's Epilepsy Treatment.—A Dr. Thomas G. Maghee of Lander, Wyo., sold an alleged remedy for epilepsy on the mail-order plan. Some years before Dr. Maghee went into mail-order quackery, he was superintendent of the Wyoming State School for Defectives. In exploiting his epilepsy treatment he has capitalized this fact. The Maghee advertising matter declared that the treatment would give "immediate and continuous relief of epilepsy" and that those who took it would "return to a normal condition in every respect." When analyzed by the chemical laboratory of the American Medical Association, the Maghee nostrum was found to contain a mixture of about 64 per cent luminal, 32 per cent charcoal and nearly 3 per cent bismuth.

May's Formula.—The W. H. May Medical Laboratory of New York City sold an alleged cure for epilepsy known as Dr. May's Formula. Earlier it had been called Dr. May's Epilepticide. When analyzed in the chemical laboratory of the American Medical Association, May's Formula was found to be another one of the bromide mixtures.

Miles' Restorative Nervine.—The Miles Medical Company of Elkhart, Ind., marketed a number of "patent medicines," among them Miles' Restorative Nervine, which was recommended for epilepsy. When analyzed in the chemical laboratory of the American Medical Association, it was found to be another one of the numerous bromide mixtures. Miles' Restorative Nervine has in the past been declared misbranded by the federal authorities because of the false and fraudulent claims made for it, and some persons connected with the company were fined. A physician has reported the case of a nursing infant who suffered from bromide poisoning due to the fact that the mother had for some time been taking Miles' Restorative Nervine.

Nobro.—The Nobro Medic Company of Worthington, Ohio, sells a mail-order nostrum for epilepsy. The claim to medical knowledge of Harry M. Freck, who seems to have been the man behind the concern, rests on the fact that he once operated a clothing concern and later ran a stenographic bureau and an advertising circular letter business. Under the style Epicura Company, Freck sold another epilepsy remedy containing bromides. Nobro, as the name indicates, contains no bromides. The chemical laboratory of the American Medical Association found that it contained about equal quantities of luminal and milk sugar.

Peebles' Epilepsy Remedy.—The Peebles Institute of Health, Battle Creek, Mich., put out this product. The company used to have for its chairman one J. M. Peebles, M.D., and for its treasurer and general manager, W. T. Bobo, M.D. Peebles, who did not graduate in medicine until he was over 50, and then from a school that later became fraudulent, quacked it for many years and finally died at the age of 99. Bobo has been interested in various quack concerns, including a fake goiter cure and diabetes cure. The Peebles remedy, when analyzed by the chemical laboratory of the American Medical Association, was found to be another one of the bromide mixtures.

Peeke's Remedy.—"Professor W. H. Peeke"—whose real name was Parker R. Whitcomb—of New York City, sold an "infallible remedy" for epilepsy. When analyzed by the chemical laboratory of the American Medical Association, the stuff was found to be another bromide mixture. Whitcomb has been fined for the fraudulent claims that he has made for his nostrum.

Towns' Epilepsy Treatment.—The product of the Towns' Remedy Company of Milwaukee, Wis., was known originally as Dr. Towns' Epilepsy Cure. When the food and drugs act made lying on the label expensive, the name was changed first to Dr. Towns' Epilepsy Treatment and later to Towns' Epilepsy Treatment, for the product was not a cure and Towns was not a doctor. In the past, the Towns concern has been charged with having sold the

names of its sucker list to other epilepsy cure quacks. When it was analyzed by the chemical laboratory of the American Medical Association, Towns' Epilepsy Treatment was found to be a bromide mixture.

Trench's Remedy.—Trench's Remedies, Ltd., of Dublin, Ireland, has put out an alleged cure for epilepsy in two forms—liquid and powder. It is sold in the liquid form in Great Britain and in the powdered form elsewhere. Both forms, when analyzed by the chemists of the British Medical Association, were found to contain bromides. The powdered form, which is sold in the United States and Canada, has been found to be a mixture of two-thirds potassium bromide and one-third moist brown sugar.

Vernon Laboratories.—See Western Medical Association.

Warn's Epilepsy Treatment.—The Warn's Remedy Company of Los Angeles, Calif., is a trade name used by Katherine Warn and her son, Stanley J. Warn. These people seem to have appropriated the advertising claims used by Maghee of Lander, Wyo. When the Warn nostrum was analyzed by the chemical laboratory of the American Medical Association, it was found to be about one-fourth charcoal and three-fourths luminal, thus differing but slightly from the Maghee nostrum.

Waterman's Tonic Restorative.—The "Waterman Institute" of New York is one of the names under which A. W. Chappell has advertised a "cure" for epilepsy. He also operated under the name "Lexington Drug and Chemical Company." He also seems to have conducted, under the name of one H. W. Perkins of Red Bank, N. J., the Kline Epilepsy Remedy. Waterman's Tonic Restorative, when analyzed by the chemical laboratory of the American Medical Association, was found to be another bromide mixture.

Western Medical Association Treatment.—The Western Medical Association is a speciously named quack mail-order concern operating from Chicago, selling an alleged remedy for epilepsy. The concern has published what it called an "unsolicited letter" from a Chicago physician, who, on investigation, was found to be one of the owners of the concern. The Western Medical Association's treatment, when analyzed by the chemical laboratory of the American Medical Association, was found to consist of tablets containing luminal, tablets of the digestive type and a laxative, probably aloin.

The men behind the Western Medical Association seem to have extended their mail-order epilepsy cure quackery under the name of Vernon Laboratories.

Fargo and the Health Habits

A Chapter from a Community Adventure

By
Maud A. Brown

PART I

It was an uncomfortably high and hard pedestal.

"GEE, Mother! I wish my teacher could cook for me!" Mother took it standing. Upon inquiry she discovered that teacher would provide spinach, lamb chop, baked potato, brown bread, sponge cake, apple sauce and milk. A very good dinner indeed, and, it transpired, one that Rolfe himself had chosen that day at a cafeteria game in school.

Mother suggested having the things of Rolfe's choice next day, being among those fortunate ones to whom the difference in cost between lamb chops and pot roast is negligible. Being a successful mother, she did not remind her young man child, as he ate it with enthusiasm, of her long struggle to get that same spinach cooked that same way down that same boy. Being a good sport, she told Miss Gay about it at the next Parent-Teacher Association meeting, and thus began a league offensive and defensive against Rolfe that left him not a chance.

Miss Gay Teaches Second Grade

Miss Gay is any second grade teacher in Fargo, N. D., where health education in the schools has been an integral part of the five-year child health demonstration just completed. She is in a strategic position. It is in her room that the checking of the observance, item by item, of a program of essential health practices begins.

The first grade children have acquired the swing of the routine by playing it in various ways and by talking it over daily in school. They have at the same time learned to read. With a celerity hardly short of miraculous, they have acquired a vocabulary that enables them, by the time they come to Miss Gay, to read the daily health record, the rules of the game, and the all too few pieces of second grade literature with health content. This daily health record is a list of essentials of health behavior, together with some "desirables" not strictly concerned with health but contributing, at least, to the happiness of the child's neighbors. The record used in Fargo is adapted to local conditions, and is not offered as a model for other localities.

After the salute to the flag and the pledge of allegiance, the children in the front row distribute the records. Carefully, item by item, teacher and children read the record together, and a straight line is put in its appropriate square if the item has been carried out, a zero if it has not.

Standards of Truthfulness

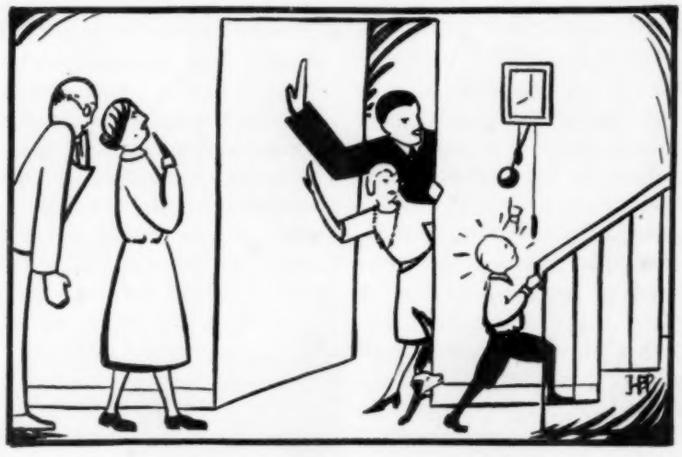
Miss Gay realizes that the accurate marking of this record means an incentive not only to the observation of the health habits but to the establishment of standards of accuracy that most adults who consider themselves truthful have not attained. She has the knack of striking that most difficult balance between showing so intense a desire for complete observance of the program as to tempt the children to lie to please her, and showing too little interest to enlist their effort to observe it. There is a casual way of treating these questions that brings a truthful answer because it is so obviously expected.

Mostly, the children tell as matter-of-factly what their bedtime was as they would tell the color of their house. It is only when the teacher's interest lags that prevarication creeps in. This intense desire, casually expressed, is a piece of teaching technic comparable to the legato touch, firm and relaxed. It comes more naturally to some than to others, but it can be acquired by all who care to practice patiently.

The fact that what looks to adult visitors like a list of a dozen isolated items, some of them repeated two or three times during the day, is remembered for the most part accurately is evidence that the purpose of the first grade teachers has really been achieved. The program has been taught as a connected narrative, the chronological order having been carefully preserved in reproduction. By the end of the first grade, every infraction of the program is almost of necessity a conscious one.

Since the program is a simple one, which contains no features particularly objectionable or difficult, most families have adopted it. Many have done this because it is practically the same program that they have been attempting to enforce, and they are glad of the help of the school; many as the path of least resistance. Instead then of twenty items to remember each day, it is one or two failures that stand out. The observances have become routine practice in Fargo families, largely at the insistence of the children.

But Rolfe is not merely a unit in a routine procedure. A case study sheet follows him from grade to grade. These sheets contain informal memoranda that every teacher in Fargo keeps for every child, jotting down from time to time disconnected items with reference to his home environment, history, behavior, physical condition—anything at all that can help explain him. They grow by accretion, and are handed on from teacher to teacher. The confidential nature of the notes is held inviolate.



"I have to go to bed at 8 o'clock."

These case studies—the term is used for lack of a more convenient one; they are by no means to be considered in the sense of the technical casework of the trained social worker—serve the teacher as her reminder of the findings of the school physician at his periodic examinations. On them she makes note of all the conditions that are significant for the child's health, and of her efforts to secure the recommended corrections. Since she also notes reasons for failure to secure corrections, the next teacher takes up the problem at a great advantage.

In making and interpreting these notes the teacher, nurse and physician are brought into close contact. Real teamwork has resulted. Each morning the nurse appears in the school and attends to routine care of minor illnesses, accidents and suspected contagion (including colds), which are discovered by the teachers during the morning health inspection. Slips requesting home visits for various reasons, including routine follow-up of second-day absences, are filled out by the teacher immediately after the morning health period. These are returned to the teacher, with the nurse's notations on conditions found, after the visit has been made.

This morning, however, the nurse, Miss Nelson, came smiling through the rooms, which she did as often as her full program would allow. Miss Gay felt the anticipatory flutter among her brood and looked up from the slips she was filling out.

"Who has something to tell Miss Nelson?" Hands waved. Miss Gay glanced toward Oscar. His gaze through dark rimmed spectacles was fixed on the ink well in his desk top. Henry's hand in the next row was waving vigorously, his blue eyes shining through similar dark frames. "Well, Henry?" "I've got my glasses!" "Fine!"—looking about—"and so has Oscar!"—turning to Miss Gay—they exchanged glances which meant "Thank heaven—at last!" "Come up, both of you and let me see them." Both boys came up—pink and proud, but with a subtle difference. After Miss Nelson had gone, Miss Gay continued to look at Oscar with a puzzled little pucker between her eyes.

Two days—and Oscar had lost his glasses. Two more—and still no glasses. And Oscar acted queer. "Come up stairs with me, Oscar, we're going to ask your sister if she can help you find those glasses." He gave signs of acute misery, but perforce obeyed Miss Gay's compelling hand.

"Funny," said Miss Anderson, "she had lost hers for a couple of days, but found them. Signe, come here a minute." Oscar began to whimper. The guilty story came out. Oscar needed glasses. The school physician had sent home a notice marked "urgent." The nurse kept calling up and making mother cross. Father couldn't buy glasses because he had to save his money for payments on the car. But the nurse at home and Miss Gay at school kept at it. Then came the last straw. Henry had got glasses and, thereby, much praise from Miss Gay, whom Oscar loved to the bottom of his substantial

shoes. Oscar could not stand it. He stole his sister's glasses, and all went smoothly until the fire drill when his sister caught him in the hall and retrieved them for her own eyes, as near-sighted as his. "It's a problem," sighed Miss Gay. "Come on, Oscar, let's go."

Miss Gay and Miss Nelson had lunch together. Followed several telephone calls. In the afternoon a serious, tow-headed 7-year old interviewed various people and listened to telephone conversations correcting errors of statement and record that had radiated from the pebble of falsehood.

"Now," said Miss Nelson, with her lips set firmly, "that man gets the glasses—car or no car." That is very recent history, but one senses that the glasses are as good as on Oscar's snub nose; also that the erased "Correction—eyes" on the board of health records and on the physician's examination record in the principal's office will be reentered before very long.

Both boys came up pink and proud, but with a subtle difference.

In any well-taught school, the first and second grades form a pedagogical unit. This is a period of social orientation. The child acquires the tools of spoken and written language, and by their means lifts himself out of the individualistic, nonsocial preschool age into the common life about him. Paradoxically, he discovers his family through the medium of the school.

The first grade teacher takes, as her point of departure, the home life of the child. Through the fascinating new art of reading, his own experiences take on interest and importance as he meets them coming back to him illumined by the touch of imagination which all children's texts should give, and with which the real primary teacher knows how to vitalize the routine of the dreariest home represented. The daily health program forms an ideal first step in the health education of these little folk. Its dramatization, in one fashion or another, forms the keystone of health instruction in the primary grades.

More important than any teaching method, or than all methods together, is the atmosphere that surrounds the child—the taken-for-grantedness of these health observances as the accepted order of things. The casual references to the various items of desirable health behavior—here and there all day long and every day in the course of the other school activities—are the teacher's most effective tool. There is soon created in the child's mind an acceptance of such behavior as a part of the natural order of things. There is absolutely no doubt in his mind when he tells his parents, "I have to go to bed at 8 o'clock," or "I can't eat candy between meals." It is not a matter for argument; it is the categorical imperative.

All this time the first grade child has been developing a health vocabulary so that the teacher's word is soon reinforced by the printed page. If, by the second year, a passing doubt of the omniscience of the teacher has crept into the mind of any child, the printed page immediately settles the matter. By the end of the second year these teachers, simply by including the essentials of health behavior among the major interests of the child as expressed in his developing technics of oral and written language, art and dramatization, have made an unconscious infraction of the health habit routine practically impossible.

Here the problem becomes one of securing home cooperation, the only real difficulty—as all teachers testify—in the teaching of health. But, again, Miss Gay found virtue bringing its own reward. The work of instruction, drill and motivation had been so thoroughly done that the children took matters into their own hands. They moved on their homes like an army with banners. Clearly and simply they gave forth the clarion note of the divine wisdom of their teachers as the ultimate and unquestioned authority. Before this trumpet blast of faith the walls of parental indifference crumbled before the seven times round had well begun.

It was an uncomfortably high and hard pedestal upon which Miss Gay suddenly found herself stationed by the children. She was held up to the parent not only as the ultimate authority, but as the perfect example. But she was game. She stayed aloft, every one of her. However, it is safe to say she welcomed that first vacation.

(The second half of Miss Brown's article will appear in the June issue.)

Outdoor Companions

H. Armstrong Roberts

Ewing Galloway

H. Armstrong Roberts

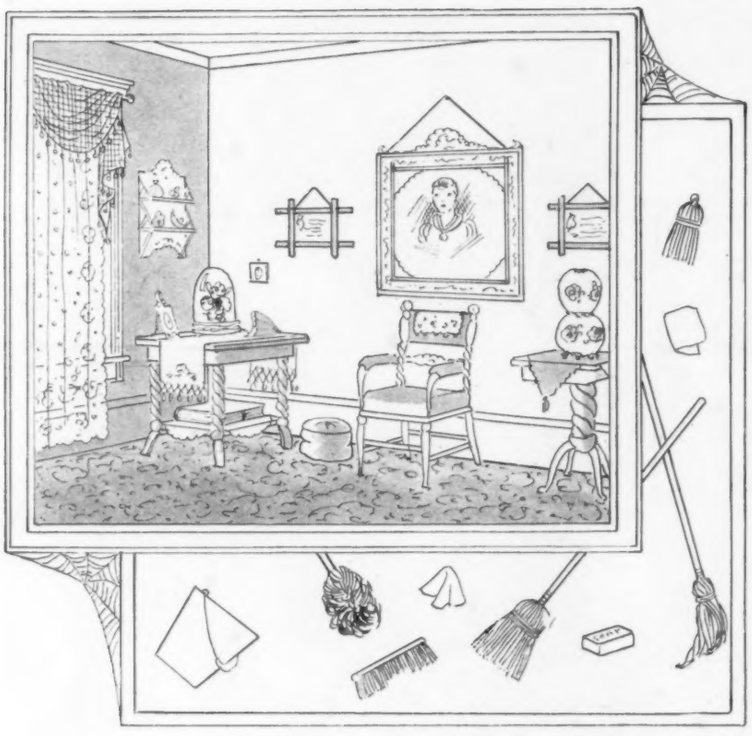
H. Armstrong Roberts

Ewing Galloway

H. Armstrong Roberts

Ewing Galloway

H. Armstrong Roberts



When Cleanliness

By Agnes Donham

IN THE old New England village where I was born, the list of the cardinal virtues was, true to Puritan tradition, headed by godliness, and, as we children were constantly reminded by our maternal ancestors, cleanliness came next.

To our childish perception of the things that were, godliness seemed out of place. It was to our minds not as difficult of attainment as that other virtue, which our parents and teachers persisted in placing second. We could imagine people who were perfect, or nearly so. In our own acquaintance, there were grandmother and the minister and Great-Aunt Sally, besides a host of others whose pious and calm demeanor in church proved them godly beyond doubt. We compared the ease with which they seemed to attain godliness with their struggle for cleanliness, and we knew in our hearts that the second battle was the harder to win.

"Turning Out" the Parlor

Many things contributed to this conviction of ours. The daily manipulation of the dust cloth with its chase after the tiniest specks of harmless dust was a chief argument. The weekly "turning out" of every room was evidence enough that our elders held cleanliness in no second place. The labor involved in removing the furniture, sweeping the thick woolen carpet, and washing the windows and woodwork was arduous. Beating the upholstery and cushions, followed by the replacement of the carefully dusted furniture and bric-à-brac was often our share in this weekly wrestling match with the enemy of a leading virtue. The ceremony attendant upon the closing of the door to keep the room for a time at least free from dust was sufficiently impressive to make us compare the importance of a clean room with that of the village church between services.

These and a hundred processes of kitchen cleanliness all tended to prove our point, though we found that there was nothing to be gained in arguing the matter. In speech, godliness came first and cleanliness was next; John Wesley had said so and he could not be wrong. The lesser virtues—honesty, clean speech, courtesy, hospitality—had their places in the race, but a long distance divided them from these two, the greatest which it was possible to possess.

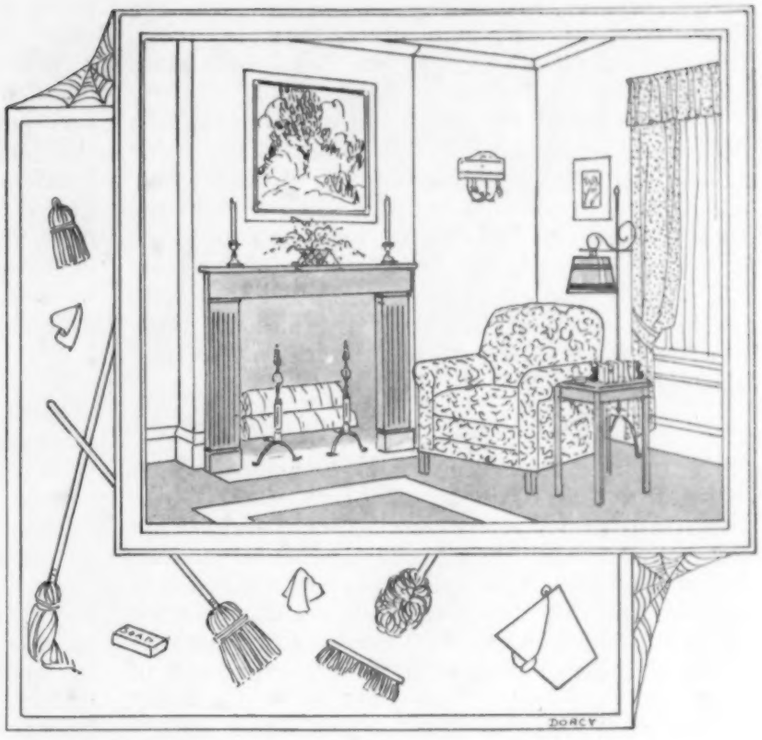
Godliness More Easily Acquired

Our own private and public struggles to conquer the flesh and acquire these virtues also proved to us, if not to our elders, that however it stood in the list after its attainment was accomplished, cleanliness had the more important place in the details of living. Godliness could be made ours by regular attendance at church and Sunday school. Later a Sunday school class to teach and a place in the choir, if we proved to be singers, might be necessary to perfection, but self-restraint and a pious demeanor on Sunday would, if not spoiled by too riotous behavior during the week, eventually bring us to the desired goal.

Cleanliness was a different matter. It included such horrid things as weekly baths in the big wash tub, with care not to slop the water; painful things like clean ears and finger nails; unnecessary attention to necks and hands

Is Godliness

Occupation: Housewife



already "clean"; and nightly soaking of feet, which having been comfortably bare all day had begun to toughen under the process and resented the softening effect of the hot, soapy water. Added to these were lesser but still disagreeable details like clean pinafores and dresses.

Perhaps the daily washing or wiping of dishes was our greatest stumbling block, but the climax came on Saturday morning, when mother emptied every dish in the pantry, "to clean them out," a process that our impatient minds insisted was invented solely to keep us in from play.

Spring and Fall Cleaning

Yes, even without the spring and fall cleaning, we suspected that cleanliness came first. When carpets came up, familiar rooms grew strange because they held the contents of other rooms, and the various members of the family slept in the guest room as their rooms in turn went through the cleaning process. And when closets disgorged those treasures that saw the light only once a year, then our suspicion became conviction. Cleanliness, which, unlike godliness, consumed a part of every hour, became the one big virtue in our philosophy of life.

But even in a New England village, these things changed. Rugs and carpet sweepers, hardwood floors, vacuum cleaners, bathrooms, washing machines and mangles helped to set the matter right and push cleanliness back into second place. "Cleanliness is next to godliness" became the generally accepted truth until we had to move, and now with all of our mature appreciation of the difficulties surrounding the attainment of godliness we have a new valuation of cleanliness and its importance in the list of virtues.

Having moved from a suburb that knew not coke or soft coal to a city that knows not anthracite, we have changed our minds once more and with the change have acquired a keener perception of the difficulties of sanitary living. Exchanging a modern apartment on a side street for a south side apartment in an old house—remodeled to be sure, but still old—we have returned to our childish refusal to admit that cleanliness deserves only second place in the list of virtues. We now measure it not by its value as a condition but by the labor and long suffering with which it is accomplished.

House Is Now Pompeian

Once, before we moved, we could dust only twice a week and not become Pompeian. Now, the morning that follows even one day of neglect finds literally tablespoonfuls of cinders on the window sills. Once, we could take a dish from the shelf and use it at once, but now a dish unused for two days must be freed from dust before it is fit to hold food.

An hour of open windows is inevitably followed by a session with brush and dust pan or every step crunches soot and cinders into rugs and floor. Even after careful dusting of furniture, the ordinary handling of utensils leaves the hands gray with grime.

The garments in our closet become tinged with gray; clothes hung out on the roof to dry return to the house flecked with black spots.

White dresses are impossible unless one has time to wash and iron after every wearing. Handkerchiefs grow gray in the bosom and, like underwear, refuse to wash white.

Water spilled on the floor or window sills that were washed yesterday assumes the color of ink and almost the consistency of mud when, in an attempt to wipe it up, we mix it with the soot beneath it. Flecks of soot half an inch long float through the ventilator into the bath. The cracks and crannies of the old house with its many coats of dented paint and its loose window panes store up an amount of soot and cinders every day that is unbelievable.

Cost of Cleanliness Is Appalling

Boxes and bundles in closet or drawers acquire a fine covering of black dust, which frequently penetrates to the contents and always makes handling disagreeable. Linen covers, bedding and curtains are grimy beyond belief in a period of time formerly well within the limit of continued cleanliness. Books and furniture grow shabby overnight in this playground of soot and cinders. The cost of cleanliness, whether reckoned in time, strength and energy, in terms of soap or in wages for service, is appalling.

In former days of ignorance, we often agreed with those critics of the poor who said, "They may be poor but they might keep clean." Now we know that there is no possibility of their being otherwise than dirty unless they devote every minute of life to the battle.

When white grows gray while you watch it, when mops and dusters refuse to be boiled or scrubbed clean, when floors are never so clean that another scouring would not yield water as black as ink, when curtains might be changed every week and still look soiled, then cleanliness, if approached at all, becomes the object of every waking moment, and there is valid excuse for dirt in any spot that has not had a daily scrubbing.

No Wonder the Poor Lose Heart

Filth may be avoided, but dirt is with us always, even when we begin and end each day with the faithful scrubbing pail and mop. What wonder that the city poor lose heart in the battle and drop cleanliness to the bottom of the list of virtues worth the strife?

As infants, we conceded the right of our mothers to agree with Wesley, though we loved to splash in the tub; as children, we protested inwardly against the habit of our elders to exalt godliness while working so diligently for cleanliness, and we transposed the order. Although we did not boast of our heresy, cleanliness beat godliness by a long mile in our marathon of the virtues. Later, godliness gained head place, but now that we live in the "poorer part of the city" they run neck to neck and cleanliness *is* godliness.

MUSEUM FATIGUE

ACUTE memories of aching backs, dizzy heads and blistered feet have fostered in more than one person a permanent distaste for all museums or exhibits of science or art. The exhaustion that follows even a two-hour trip through a museum sometimes makes the sufferer wonder whether the esthetic advantages are worth the price.

It is gratifying, therefore, to many who wish to pursue their education along these lines that "museum fatigue" has been recognized as a definite category of human discomfort, and that efforts to abolish it are now in progress.

Museums are intended to evoke pleasure and intellectual satisfaction, but these ends all too often fail of accomplishment because of the fatigue which museum inspection develops in undue degree, comments *The Journal* of the American Medical Association.

Museum visitors should be sufficiently interested to want to return and certain physical conditions will conduce to this desire. Suggestions for building a museum with regard to comfort were recently advanced by a writer in the *Scientific Monthly*. Temperature and humidity should be agreeable—they usually are not—and dust and dirt should be eliminated as far as possible.

The suggestion that the walkway should be easy on the feet will be welcomed by those who remember the unyielding marble floors of many of the more pretentious museums. Chairs and stools conveniently placed for rest and contemplation of the exhibits will help prevent fatigue.

The provision of restaurants to enable the hungry visitor to lengthen his visit and to make frequent trips to the museum is recommended. With these facilities for rest and refreshment the museum would not be what some one has called an extensive storehouse in which people get tired, concludes the editorial in *The Journal*.

MENTAL HYGIENE

in Home and in School

By Louis A. Lurie

THE home is the individual's first and closest environment. The home is also the unit of society. Hence whatever affects the home must of necessity affect society at large.

Broken and disrupted homes, unhappy homes, impoverished homes have their percussions and repercussions far beyond the home. Society is cognizant of this, as witness the large amount of work being done by numberless social service agencies. The home and the individuals composing the home must be preserved. Physical and mental distress must be relieved and social adjustments must be reestablished.

In my opinion, all social service is fundamentally psychiatric social service because whenever social service is involved one is dealing with human values as expressed in behavior reactions of various types. Real social service, for example, is not limited to obtaining a position for the head of the family. It should attempt to find out why the head of the family has been unable to keep a position and, having learned this, should help him to find a position suited to his physical and mental capacity. This is vocational guidance.

All conduct is the result of the reaction of the individual to his environment. No social agency can hope to accomplish any lasting good that does not approach the problem of human behavior whether in the form of social maladjustment, of social incompetency, of poverty, of crime or of delinquency from the psychiatric point of view.

The Case of Mrs. M.

A case in point is that of Mrs. M., 45 years old, who first came to the attention of a social service agency because of complaints of neighbors with whom she fought and quarreled constantly. Investigation showed that the home was dirty and overcrowded. Chickens were running around the rooms and halls, and the neighbors reported that whenever Mrs. M. went shopping she would lock the children in the rooms. Often she would forget where she placed the key. According to the husband, she had an ungovernable temper and would punish the children by tramping on their fingers and toes.

The social worker talked and argued with the woman but to no avail. She asked the officials of the Better Housing League to help. These officials tried to instruct Mrs. M. how to keep her home cleaner. There was no improvement. In desperation the board of health was notified. An inspector came and ordered the woman to clean up immediately; otherwise he would have her arrested. She merely laughed and was promptly cited to court. The majesty of the law, however, held no terrors for her.

Three years after her first contact with the social service agency she was referred to the psychiatric clinic for examination. This examination showed that the woman was suffering from general paralysis, a condition obviously not amenable to persuasion, threats or punishment.

The psychiatric work did not stop here. The husband and children were also examined. The oldest child, a girl 7 years old, showed clinical and serologic evidence of congenital syphilis. The others were normal. At present the girl is receiving antisyphilitic treatment and this treatment will probably be the means of preventing the development of a serious physical and mental condition later in life.

Constructive Work in the Home

From the standpoint of mental hygiene, the home offers even greater possibilities for constructive work. The home is the place where the child receives his first impressions, where he makes his first contact with things outside of himself, where he forms his first judgments and where he is called upon to make his first inhibitions and repressions. His point of view later in life and his manner of reacting toward his fellow men will depend to a great extent on the nature of these early contacts in the home. In other words, the home is the place in which the pattern type of the child's reactions in adult life is formed.

Whether for good or for evil, the home atmosphere supplies the motif for the pattern of the

individual's type of reaction. The relation of broken and disrupted homes, of incompatibility of parents, of alcoholism, of absence of religious influence in the home, to incorrigibility, delinquency and criminality of children is well known.

There may, however, be at work in the home subtler influences that are instrumental in producing children with personality defects grave enough to prevent them from making normal social adjustments. Parents who permit their children to have temper tantrums, to be arrogant and domineering, are burdening them with personality characteristics that will make it difficult for them to adjust later in life. So also are the parents who are oversolicitous, who attempt to surround their children with every possible precaution, who instead of intelligent guidance give them false protection.

Parents must be told that they themselves furnish the chief pattern for their child's reactions, that their conduct will be closely copied and reflected in the child's behavior outside the home.

Thanks to the wonderful work of infant welfare stations, most mothers today realize the value of physical hygiene for the welfare of their babies. As a result infant mortality has been reduced tremendously.

The importance of these early years from the mental standpoint, however, is just beginning to be realized. Parents must be taught the importance of surrounding the child with a normal home atmosphere; they must be told that they themselves furnish the chief pattern for their child's reactions, that their conduct and their actions will be closely copied and reflected in the child's behavior outside the home.

Parents Must Detect Abnormal Trends

Furthermore, parents must learn to detect all abnormal trends or inhibitions that the child may exhibit. Temper tantrums, abnormal shyness or timidity, undue fears, oversensitiveness, day dreaming, inability to concentrate, tendency toward a shut-in type of personality or other personality defects are all signs that the wise parent will heed and take proper measures to correct.

The majority of abnormal mental states begin early in life and manifest themselves in a benign but at the same time in a definite manner. Too often such symptoms are looked on as wilful misconduct, when in reality they represent the child's blind reactions to an intolerable situation. Many a mental shipwreck may be prevented by attention to these apparently unimportant symptoms.

In this connection, the establishment of habit clinics has been of inestimable value. These clinics have been established in various parts of the country for the purpose of studying the habits, reactions and personality traits of children of preschool age.

Many mental hygiene problems begin with the child entering kindergarten. Not only are any abnormal tendencies or habits of the child noted in these habit clinics but the parents are advised wherein they may be at fault in the production of any abnormal condition. At these examinations, everything that has any bearing on the child's future welfare is discussed with the parents and plans are outlined whereby the child may develop his mental capacities to the fullest. In reality it is instruction in mental hygiene for the parents as well as for the child.

It is too soon as yet for the country to see the results of this work, but that it will be productive of tremendous good is beyond question. Many horrible crimes that have shocked the country would never have been committed if the persons committing the crimes had had the advantage of such clinical examination. Their conduct would have been foretold and steps taken to circumvent it. Danger signals are first shown at home, and once parents are taught to recognize them their harmful effects will be greatly minimized.

The Child Goes to School

The first contact that a child makes with organized society outside of the home is the school. Traits, trends, dispositions and characteristics that were considered normal in the home are for the first time subjected to the impartial scrutiny of classmates and teachers. New standards of conduct are brought into use and as a result peculiarities are noted where none apparently existed before.

The child himself may become acutely aware of these differences and unless helped is likely to flounder. By far the greater number of school failures are due to personality difficulties rather than to intellectual deficiencies.

Unfortunately, many of those in charge of our school systems still fail to realize that it is the whole child who goes to school and not merely his intellect. A physical being composed of emotions, instincts, desires and habits and with a definite personality makeup enters the schoolroom and looks to the teacher for help and guidance in his further adventures in life.

Must Teach Child to Be Socially Adequate

Looked at from this point of view, the fallacy of considering the child as a receptacle in which a prescribed amount of learning must be poured becomes obvious. The aim of our educational system should be primarily to teach the child how to adjust himself to himself and to his environment; in other words, how to become socially adequate. Such an adjustment requires more than mere intellectual training. It means teaching the child social values, giving him a knowledge of the source of human conduct and of the importance of his relation to his environment in general and to his home in particular; and most of all impressing him with the tremendous influence of his own inner psychologic forces.

This, in turn, implies that the teacher herself be informed regarding the causative factors governing human conduct and of the fundamental principles of mental hygiene.

Unfortunately most teachers have little conception of the psychologic principles that control human behavior. It is difficult for a teacher to link, in a causal relationship, the child's failure in school with the fact that his home atmosphere is one of bitterness and strife. It is even more difficult to understand that a child's wilful misconduct in the classroom may be only an attempt to conceal a marked feeling of inferiority, a compensatory reaction that is foredoomed to failure but that nevertheless represents a blind struggle on the part of the child to attain his goal of superiority.

Similarly, it may not be apparent that the child's peculiar behavior, inattentiveness, obstinacy, truancy and failure in class work are defense reactions by means of which he hopes to escape from an unhappy situation, a situation to which he cannot adjust. This often is true of the child who develops a headache or becomes nauseated and vomits on his way to school or stammers when called upon to recite. Looked at from this angle, the child's conduct is not as simple and as superficial as it appears to be at first glance. It is the expression of the interaction of forces both within and without the child. Hence the fallacy of basing pedagogic methods and standards on the child's intellectual capacity only.

The child's success or failure in school and in later life as well is not determined solely by his intelligence quotient. It is startling the number of men and women who after graduating from college flounder around and fail miserably. Men and women with college degrees who should be molders of thought and leaders of society offer the sorry spectacle of social and economic failures. If success depended entirely upon the relation of the mental age to chronological age, all college graduates would be highly successful. Unfortunately this is not true.

Physicians have been criticized because some of them treat only the disease and fail to realize that they are also treating a human being who happens to be suffering from the disease. Similarly our school system can be criticized because it concerns itself primarily with the problem of how to teach reading, writing and arithmetic and fails to take into consideration the child who is being taught.

A reaction has already set in. Definite courses in mental hygiene and allied subjects are being given in most colleges for teachers. Not only are teachers becoming acquainted with the laws governing human conduct, of the factors that make up human personality, of mental mechanisms and of the value of environmental influences, but what is of even greater importance they are learning how to apply this knowledge to the solution of individual problem cases.

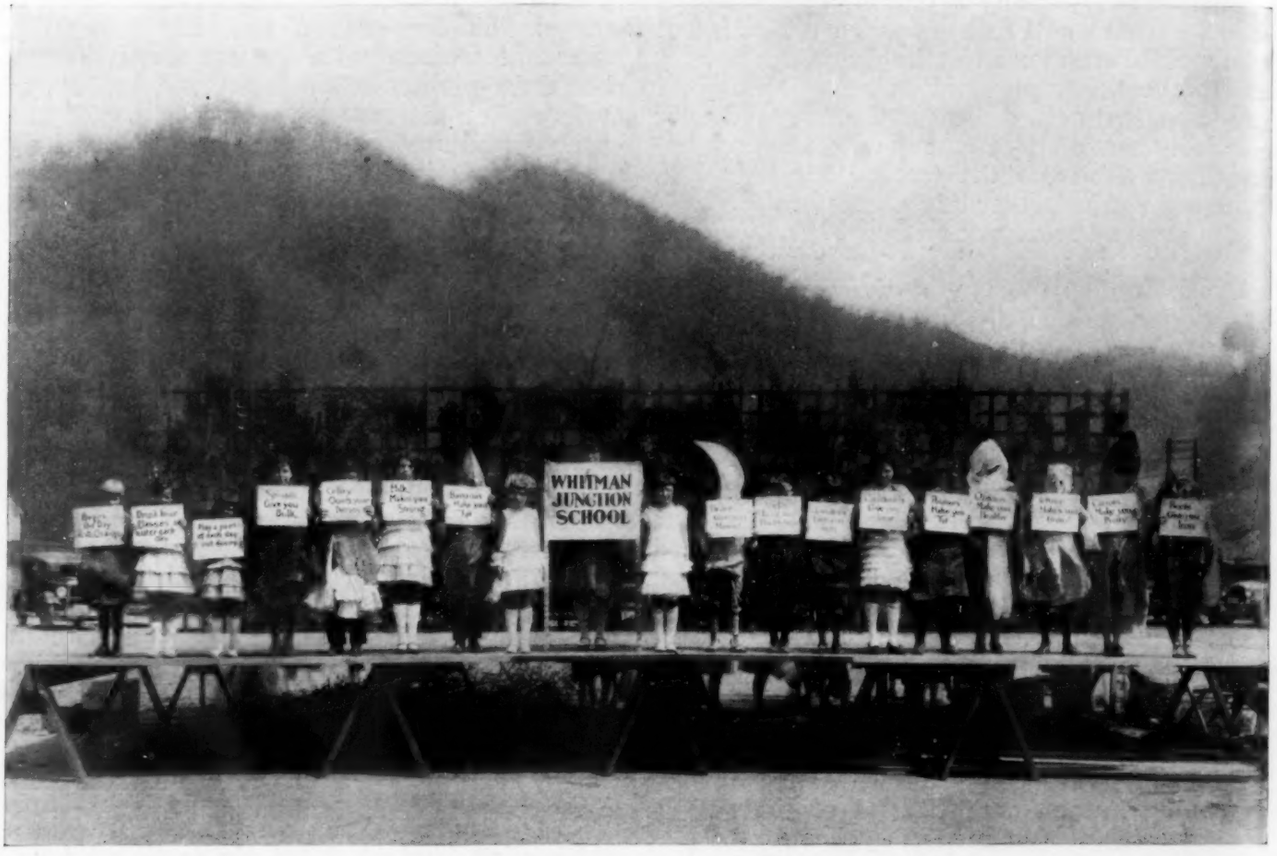
Showing Student What He Is Fitted for

A more recent and even greater step in this direction is the establishment of departments of mental hygiene in the public schools and colleges. These departments, manned by competent staffs of psychiatrists, psychologists and psychiatric social workers, should be of tremendous value to both students and teachers in fathoming and solving life problems and preventing maladjustments.

Mental hygiene in the schools is not primarily for the detection of mental diseases, nor is it primarily to prevent students from suffering nervous breakdown. It attempts, in addition, to prevent a large number of college graduates from becoming social and economic failures. It attempts to give the individual a better understanding of himself, an insight into his own mental makeup, a knowledge of his inhibitions and of his capacities as well as a realization of his shortcomings.

With the more accurate development and greater application of the principles of vocational guidance it can be confidently expected that the problems of the social misfit and of the economic failure will be solved in the near future.

Aladdin's Bottle of Milk



Children in a West Virginia mining county can talk intelligently on malnutrition, defective teeth and poor vision. Here they are impersonating vegetables in a Child Health Day observance.

THE governor of West Virginia recently paid particular attention to an out of the way mining county that has not even one town large enough to be on the map. He wrote a special letter to the children of the rural schools of Logan County, all because there was a grade school teacher who was also a milkman.

Teacher Plays Milkman

Teachers in rural communities often find themselves playing rôles as varied as janitor, baker or candlestick maker, but Miss Mabel Baisden, teacher of Upper Whitman County School in the heart of the mining district of West Virginia, found herself playing milkman. The rôle wasn't exactly play, for every school day from October to February, when a dairy finally consented to take over her customers, Miss Baisden delivered 7 quarts of milk to school so that the underweight children who could not bring it from home might have their 10 o'clock drink.

Did you ever try carrying 7 quarts of milk at once, some of it in slippery glass fruit jars? If you have and could add to that the books and other necessary school baggage teachers always have to carry, you realize why milkman is a rôle that is h' 'o play; but unless you have walked up the hills and down the hollows around a coal mining country, you cannot realize what the daily delivery of that 7 quarts of milk did mean. During the weeks when the Ford broke down, Miss Baisden had to walk 3 miles carrying the milk.

Twelve Schools Serve Milk

Miss Baisden was the pioneer milk-project teacher in Logan County. Today twelve of the thirteen schools in the Island Creek mining section are serving milk lunches to underweight children. From daily milk for the twenty-six children who needed it in her school to daily milk available for every child of the 1,800 in the community who needs it, is a sweeping success in distribution for any teacher-milkman who started with 7 quarts.

This success could not have been possible without the health education work of the Logan county health department, which guaranteed

By Elizabeth Leitzbach

Before and After

The pathetic line of posture problems in the photograph above are pupils of the Monaville school before they began to drink milk. The children were ignorant of the purpose for which the picture was being taken so their poor posture is not exaggerated.

At the left are several of the children as they appear today, sturdy, erect and full of life.

At the right is Miss Mabel Baisden, teacher-milkman.

good milk for the county, the county superintendent of schools, and the public health nurse for the Island Creek Coal Company, all of whom sold the idea of milk in school to all the teachers. Miss Baisden was their first retail school dealer.

Health Movement Never Stops

This is the beginning of the real reason why Governor Gore of West Virginia wrote to the Island Creek school children. Among other things he said: "I am interested in the continuance of the project that you have carried on successfully for three years." In that statement the governor recognized the fact that a health movement never really stops, a fact that has come home to every teacher, public health nurse and official of the coal company who backed the initial project of getting mid-morning milk served in these schools.

From this one idea, which was put into the minds of the teachers of the thirteen schools attended by Long Island Creek workers' children, grew weight charts, daily health records, nutrition lessons, health habits at home as well as at school, a sanitary squad policing school premises, health plays, floats and parades for public programs, recognition by the American Child Health Association officials in annual meeting with the promise of motion pictures to be shown over the country, a report reviewed in New York City by a serious-minded board of directors who usually discussed coal production, a desire on the part of health education organizations such as the American Child Health Association and the National Dairy Council to show other schools how this simple, successful project could be carried on in any community.

Children Play Health Pageants

That is not all that came from this original idea bottled in milk. Like Aladdin, we might touch it again and this time see a panorama of barefoot boys and girls playing a health game with gusto and originality.

Here is Steve Toth, a Hungarian boy of 15, who made the signs and organized the Curry School sanitary squad with such placards as

"The Science of Health—No Frills, No Fads, No Fancies" proudly displayed in the Child Health Day parade.

Or we might see a wagon float in the Thompson School occupied by Max Davidson, an orthopedic patient, who did not feel equal to doing so much walking but was anxious to take part in the pageant. His float was one of the features of the parade.

Or there might appear before us the negro children in the Roland Hayes School singing as only members of their race can sing, while the young gardeners put on a tableau showing how fresh vegetables grow. There is one important thing about the Roland Hayes School which neither the music nor the effective tableau at Child Health Day really shows and that is that every one of the forty-five boys and girls have been inoculated against typhoid and vaccinated against smallpox. Thus did the health idea grow that began with a milk-drinking project!

Or we might enjoy the third annual observance of Child Health Day when state health authorities awarded prizes to the schools putting on the best performance and giving the best record of a year of health work, 1,800 children taking part in a program that is not just a stunt, but a real explanation of some health truths that they really understand; a tiny milkmaids' chorus of 6 year old tots in sunbonnets; a giant clock laid out in lime on the green grass where children act out the health practices for the hours of the day.

The House That Health Built. Children from Copperas Mine school in Child Health Day parade. Gold star pupils are looking out of eight windows.

Boys at Self-Conscious Age Cooperate

There must be some magic to this health program when we find a 14 year old boy who will dress up in a white frilled petticoat, not even masked, to carry a placard, "Celery Quiets Your Nerves."

Some of the other boys in the Whitman Junction School were beans and apples and beets, while a fat boy personified a potato, with the slogan, "These Make You Fat." Boys at the self-conscious age must usually be coaxed to play a part, but the children in Logan County seemed to have developed a county health consciousness which made them cooperate not only in the dramatic public advertising of their health program, but in the simple every day observance of the rules of the game.

You would never dream that just starting to drink milk in one school could change so many things in a whole county; that out of this project could come such county health spirit, felt by every school child. But if you go down to visit the ten white schools and the three negro schools of the Island Creek system in Logan County, you will see the results. Even the children talk about defective teeth and vision and underweights. They know these are mistakes that can be corrected if handled in the right way—a trip to the dentist for the teeth, to the oculist for the eyes, and to the milkman for underweights.

At the beginning of October, 1926, there were 345 children either 10 per cent underweight or 20 per cent overweight. On April 29, 1927, 196 had corrected these discrepancies through right eating and living habits so that out of a total enrolment of 1,787 school children, only 196, or 12 per cent, were off weight instead of the original 30 per cent. At the beginning of the school year more than half, or 1,118, had defective teeth. On April 29, 819 children had corrected their defective teeth by trips to the dentist. At the beginning of the school year 153, or almost 12 per cent of the children, had defective vision. Forty-nine pairs of glasses have been obtained.

In spite of the fact that many mines have not been running during the past few months, the health work has been progressing satisfactorily. A third of the school children have been given cod liver oil once a day, in addition to milk, and a marked improvement in their studies, as well as in their physical condition, has taken place.

Typhoid inoculations have been given in the schools and several schools have been able to reach the 100 per cent goal in inoculations. A year's subscription to HYGEIA is given as a prize.

The story of how one teacher in a Monaville school made her room 100 per cent Gold Star shows the follow-up system that these teachers used in bringing about health statistics which rival those of any group of children in the United States, those with private nursemaids and all the luxuries that should build health included:

When school opened last September, there were only thirteen Gold Star pupils in our room. Our enrolment was thirty-eight. There were fifteen with defective teeth, nine underweights, three with defective vision, and a few who did not obey all health rules.

First I started working with the underweights. I suggested that the class take a milk lunch each morning at 10:30. All pupils who were underweight and several others took the milk regularly. Their weights increased steadily until each child's weight was normal.

Next we made a drive to get each child with defective teeth to visit the dentist. This was a difficult proposition, for the parents, not realizing the true value of good teeth, failed to supply the money at first. By taking a few to the dentist each day and pleading with the parents to do their part, we succeeded in getting all pupils to the dentist except one boy. This boy was willing but his parents would not have the money till "payday," so I paid the bill myself, he agreeing to pay me later.

We still had three with defective vision; two of these did not need glasses, but had their eyes treated. One boy needed glasses. Being afraid the other boys would laugh at him if he wore glasses, he did not want to have his eyes tested. We finally persuaded him to go and after trying glasses, he found he could see so much better that he decided it would be worth while being laughed at to be able to see so well. He is now buying the glasses on the instalment plan.

Long before this time, all the children had corrected their health habits and we had reached our goal at last—100 per cent Gold Star pupils.

In some schools Gold Star pupils are those who get 100 in spelling or arithmetic. In the schools visited by the Island Creek Coal Company's health nurse, the Gold Star pupils are those who rate 100 on living.

But it is time to touch the magic bottle again, and this time we find that what seemed to be a bottle of milk, in true Aladdin fashion, has turned into a beautiful milk jug. Modeled after the quaint milk jugs used on the islands of Jersey and Guernsey and in Holland, Belgium and France, this is the prize that goes to the school with the best milk record. This silver milk jug has proved its Aladdin possibilities in still another way, for Miss Mabel Baisden, the teacher milkman of Upper Whitman School who won the jug, has been awarded a year's scholarship at the State Normal by the officials of the Island Creek Coal Company because of her outstanding health work.

This year the awarding of the silver milk jug will be on the basis of the by-products of health —going a step farther than the purely physical standards used last year. Aside from the regular records of weight normalizing, of those forming the habit of drinking milk at home as well as at school, of those who did not like milk to begin with and who learned to like it through milk-drinking at school, there will be a check of each child's condition, revealed by his ability to concentrate, interest, self-reliance, cheerfulness, friendly attitude toward others, freedom from colds and other illness, good posture. They are all by-products of good nutrition. They are all foundations that will build life success for Gold Star children.

With such possessions, these West Virginia children may be their own Aladdins in making all wishes come true.

Every pupil in the Roland Hayes negro school has been inoculated against scarlet fever and typhoid fever. Here the children are representing gardeners and vegetables.

SUGAR *as a Food*

Underwood and Underwood

Track stars frequently eat lumps of sugar before a race.

By James A. Tobey

ONE of the best sources of fuel for the human body is sugar, and when used in the correct proportion to the other necessary food elements, sugar is a valuable article of diet. It serves only the one purpose, that of supplying the essential carbohydrate, but it is the quickest, cheapest, purest and most efficient fuel for the human engine. It is likewise valuable as a flavor and in this capacity renders palatable important foods that would otherwise not appeal to the taste.

Sugar, properly employed, has many advantages as a nutritional commodity. In the first place, it is a quick source of energy. Cane or beet sugar, for instance, begins to burn in the human system in about five minutes after it has been consumed. The value of such an article in the diet of those who do heavy physical work is apparent and experience has shown that athletes and manual laborers profit from the use of sugar.

Lumbermen in the Maine and Canadian woods, who do violent muscular work and who are generally blessed with remarkable physical development, consume large quantities of sugar in the form of molasses. Members of college crews are frequently fed sugar before a grueling race, and marathon runners also find this food of advantage. Many prize fighters consume large quantities of sugar in various forms, such as ice cream and chocolates.

The person who indulges in moderate exercise or activity, as well as the athlete who participates in strenuous efforts, also finds in sugar a valuable fuel. In cold regions in which some starchy foods cannot be kept, sugar provides the best source of carbohydrate, so that it is always an important article in the diet of polar expeditions and in the northern regions of ice and snow. The explorers who attacked Mount Everest, the last stronghold of nature that man has not yet completely conquered, used a diet

with a large proportion of sugar, in order that they might have energy and fortitude.

Polar climates are not necessary to make sugar valuable, however, for it is used to advantage in the tropics and in temperate climates. In Cuba the stevedores drink dissolved sugar as a bracer for arduous tasks, while laborers in our southern states and in hot climates all over the world consume huge quantities of this concentrated form of energy.

The amount of sugar that can be used by the normal person has been computed to be about 4 ounces a day, though athletes and manual laborers can utilize much greater quantities without ill effect. The average amount eaten in this country in all forms is said to be about 2 pounds per person per week. Sugar, furthermore, provides 13 per cent of the total energy obtained from food consumed by the people of the United States, according to the Department of Agriculture, which also assures us that there is no more economical form of energy-producing material. For about 6 cents a pound, 1,820 calories of energy are available, which is at the rate of 100 calories for one third of a cent. Other sources of energy are the cereals, fruit juices, starchy vegetables, and fat and lean meat, the retail cost of which for this purpose is greater than that of sugar.

Children may be fed sugar in moderate amounts without harm. On account of the activity of children, this form of carbohydrate is advantageous, and physicians and nutrition workers are agreed that sugar in proper quantities is beneficial to growing children. Candy may be given to youngsters at the end of meals, when ice cream and other sweet desserts are also appropriate sources of the carbohydrate. Dietitians and child hygiene workers do not favor giving children sweets between meals, chiefly because sugar blunts the appetite.

Besides its ready availability as a source of energy and its low cost, sugar is practically free from the possibility of adulteration and it will keep almost indefinitely. In its ability to nourish, it replaces the fats, spares the proteins, prevents acidosis, and puts less strain on the digestive system. When used in excess, sugar may, of course, contribute to obesity and it is not to be recommended for those whose weight is above that allowable for age and height.

Underwood and Underwood

The Cambridge crew strains at the oars in preparation for the annual Oxford-Cambridge classic.

No evidence exists that the use of sugar, even in excessive amounts, actually causes any disease, but in certain diseases it cannot be tolerated. Thus, in diabetes, sugar must be shunned, because of the inability of the organ known as the pancreas to convert the sugar into glycogen, which is stored in the liver. On account of this failure to convert the sugar in this disease, it is passed out through the kidneys and the body calls on its store of fat for energy, thus causing marked loss of weight. The function of the pancreas is aided by the use of insulin, but even when this remarkable extract is employed, the diet remains an important factor in the treatment of diabetic patients, who should, of course, be under the care and supervision of competent regular physicians.

Cane sugar, or sucrose, is now the chief type of sugar obtained in pure form, though a con-

siderable amount is still derived from the beet. More than five million tons of sugar are consumed annually in the United States, the per capita amount having increased from 10 pounds to 100 during the last century.

Before the World War, the cane and the beet were about equally divided as producers of sucrose, but since then the former has supplied about three times as much as the latter. Cuba furnishes a large part of the sugar imported into the United States, though our island possessions, the Philippines, Hawaii and Porto Rico, are also important sources of supply, and our own state of Louisiana grows a considerable, but decreasing, amount.

Pure cane sugar in lumps or in granulated and powdered form is, of course, familiar to every one. It is the base for most candy and condiments. Much sugar occurs naturally in many foods, though usually of a type somewhat different from sucrose. Thus, milk, the most nearly perfect food of all, contains nearly 5 per cent of lactose, or milk sugar, while germinating cereals and malt are rich in maltose. Fruits and plant juices have two sugars, glucose and fructose, the simplest forms of sugar. Starch is carbohydrate in a complicated form and is found in abundance in such viands as potatoes. Sugars are, of course, incorporated in many cooked and prepared foods. Sweetened condensed milk, for instance, is pure whole milk, from which most of the water has been removed and cane sugar added.

The various types of sugars, single (like glucose), double (like sucrose) and the carbohydrate starch are utilized by the body in a somewhat similar way. The single sugars are burned just as they are, being oxidized in the blood, with the reserve stored in the liver and to some extent in the muscles. The double sugars are broken into single ones in the intestines by substances known as enzymes, and then the resulting glucose and fructose are burned as fuel. The starches are first attacked by the saliva, where an enzyme converts them into less complicated forms; the enzymes of the intestinal juice complete the breaking up process.

Sugar has often been accused of having a detrimental effect on the teeth. The strength and welfare of the teeth depend on many factors, such as inheritance and particularly the general diet. Foods rich in calcium, such as milk and green vegetables, assist in the production of sound teeth, while active exercise, as by chewing tough substances, also serves to strengthen them. Sweets used in proper amounts will not harm teeth when the general diet is well balanced and the customary oral hygiene habits are practiced.

Although sugar is historically an ancient product, it has been a staple article of diet in this country for only a few generations. The word "sugar" comes from the Sanskrit "Sakara," meaning small grains. The sugar cane was first grown in India about eight centuries before Christ and travelers who returned from this land brought back glowing accounts of the "sweet sticks of the East."

The ancient Greeks called sugar Indian salt and used it mostly in medicines. The sugar-coated pill is, for that matter, not unknown today. Europe did not use and appreciate sugar until the Middle Ages, after it had been introduced into Spain by the Moors. In the fourteenth or fifteenth century, the sugar cane of India was cultivated in northern Africa and from there it traveled to the newly discovered Canary Islands and thence to the West Indies and Brazil. The first sugar cane grown in America was in Santo Domingo about 1500 and later it became established in Porto Rico and Cuba. It is said that Magellan, the explorer, found sugar produced by crude Chinese methods in the Philippines when he landed there in 1521.

Sugar is a one sided article of diet, for it serves only the single function of providing heat, but in that capacity it is of great importance. It is approximately 100 per cent carbohydrate, and carbohydrate is an essential component of the well balanced diet. When properly used, and not abused, it is an important foodstuff and deserves a good share of the popularity it now enjoys in the American nutritional scheme.

How Doth the Little Germ

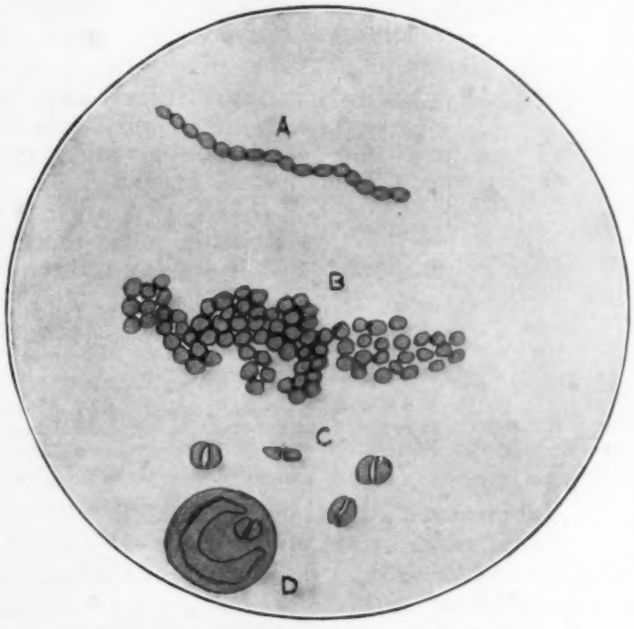
By Ruth C. Sturtevant

PART II

THE word "infection" is a common expression for everything from a small pimple to a general blood poisoning. The average person associates it with some local condition like boils, festers, sore throat or inflammations.

The germ causing diphtheria, described in the April issue, is like a rod, long and thin. The germ causing skin infections is usually round and much smaller than the diphtheria bacillus. Because of its shape the name coccus (plural, cocci) has been given to it.

Germs are much like people; they are seldom found alone, but usually are seen either in pairs, chains or groups. Cocci in pairs are called diplococci and are the kind that cause pneumonia, meningitis and gonorrhea. Those that appear in chains are streptococci and occur in septic sore throat, infections of the heart muscles and in body abscesses. Those that are found in groups are called staphylococci and are found in boils, pimples and in some general poisoning.



Cocci as they appear under the microscope. A, streptococci; B, staphylococci; C, diplococci, and D, leukocyte with diplococcus inside.

The cocci are the pus formers. They find a suitable spot for growth in any part of the body, oftentimes at some place of injury, and settle down to the business of reproducing. When the blood becomes aware of this invasion it sends to the place of growth a group of leukocytes, or white blood cells, whose duty it is to destroy the intruders. As this struggle rages, inflammation occurs. The mass of pus is a combination of white blood cells and germs in a suspension of colorless blood, or lymph. When there are more germs than the white cells can destroy, an overgrowth of the cocci is possible. They may then enter the blood stream, continue reproduction, and be carried to all parts of the body setting up new infections and eventually causing death.

The identification of these germs depends, first, on their formation, whether in pairs, chains, or groups, which is shown by microscopic examination; second, on their reaction to dyes; and, third, on their growth in special foods.

These germs are hardy and articles of clothing and anything that has had access to the pus must be carefully sterilized before they are used again. A shirt collar that has rubbed against a boil may contaminate other articles of clothing, if the water in which they are washed is not hot enough to kill the germs, and thus cause boils on persons who have had no immediate contact with the first person.

The pus-forming germs are also found in dirt and dust, and a cut, scratch or broken blister that is not protected may serve as the entrance for millions of them.

Milk plays a part in the transmission of the streptococci. Epidemics of septic sore throat have been traced to dairies where some one who is handling the milk is suffering from such a disease. The germs get into the milk and the consumer is infected. This is the reason most states have stringent milk ordinances.

A third type of germ, which is less commonly found than the bacillus or the coccus, is shaped like a cork screw and is called a spirillum. Many tropical diseases like cholera, relapsing fever, and rat-bite fever are caused by germs of this shape, but the most widely spread disease that it causes is syphilis.

Syphilis is caused by a germ called *Treponema pallidum*. It is a germ much longer than the diphtheria bacillus and is tightly twisted. It may have from five to forty twists according to the length. It has the power to move backward and forward. Drying is fatal to it, while many of the bacilli and cocci will live for long periods of time after all surrounding moisture has evaporated.

Diagram showing germs of spiral form. The germ of syphilis is of this type.

The germ of syphilis is usually found in the sore at the point of infection, although it eventually enters the blood stream. Probably no part of the body is immune to syphilitic infection.

In the final stage of syphilis the germs come to a resting place in some organ or tissue; often in the nerve centers. Here they destroy the tissues and sometimes cause the development of paralysis, insanity and many serious conditions.

Two tests for syphilis are commonly used. One is examination for the organism. This can be done only in the first stage of the disease, for the material has to be obtained from the sore. The sore is washed with a weak salt solution and some of the pus is put on a glass slide and examined by means of a special microscope. The germs appear light and glistening against a dark background. This is called a dark field examination.

After the disease has reached the second stage, the physician no longer looks for the germs but tests for certain reactions of the blood. This is the Wassermann test. The blood to be examined is usually taken from the arm vein of the patient.

In treating syphilis, the attempt is to kill the germ and thus prevent destruction of tissue. If this can be accomplished in the primary stage the germs will never get into the blood stream. If persistent treatment is given, the patient may have a comparatively normal existence.

There are known to be more than 800 kinds of bacilli, more than 300 species of cocci and nearly 100 kinds of spirilla.

In the June Hygeia

YOU will want to read in the next month's issue these three articles:

THE MODERN YOUNG PERSON
By Reginald Fitz, M.D.

CONVERTING AN OLD GRAY BARN INTO A GIRLS' CAMP
By W. H. Matthews

DO YOU KNOW YOUR VEGETABLES?
By W. B. Mack

Personal health, community health and child care are all given attention in each issue of this, the Magazine of Health.

HYGEIA
THE HEALTH MAGAZINE
Published by the American Medical Association
535 North Dearborn Street, Chicago

Plain Facts about Health and Disease

SMELLING AND PERFUMES

COMPARED with the ability of the dog to perceive odors, the sense of smell in man is poorly developed. However, the human sense of smell has sufficient accuracy and delicacy to detect in some instances the presence of as much as one ten-millionth of a gram of certain substances, thousands of times smaller in amount than is necessary for analysis by the use of the spectrum. The fact is that many of the perceptions we recognize as taste are actually smell sensations and the areas in the brain for the perception of the senses of smell and taste are closely related.

The preferences of human beings for various odors are probably related to experiences early in life associated with sensations of pleasure or of pain. Thus the reaction to odors either pleasant or unpleasant is conditioned by the sex, the race, the state of health, the mental associations and similar factors. Preference for odors once established is constant and is hardly likely to change with time, unless some definite mental association develops that causes a new reaction.

Many persons are far more sensitive to odors than others and react to various odors in different ways. Of all the human senses the sense of smell seems to have been least investigated. The editor of the *Chemist and Druggist* has pointed out in a recent issue of that publication that the words in various languages connected with smell seem to be directly or indirectly associated with syllables expressive of blowing or puffing. The Persian word for "odor" is *bu;* the Japanese word for "fragrant" is *pun-pun;* the Melanesian word for "smoke" is *punu;* a North American Indian word for "skunk" is *piupiu;* the German word expressive of a "bad odor" is *pfui;* the French word is *fi,* and to these are related the English words *putrid, fume* and *fie.*

Because of the mental associations related to odors, psychologists are beginning to employ them to some extent in their investigations to find out what association the patient may have, for example, with the odor of turpentine, the odor of roses, of bananas, of burnt feathers, or of incense. Some mental complaints associated in origin with religious fanaticism are definitely revealed by stimulations of symptoms through the burning of incense.

EXERCISE IN OLD AGE

JUST how much exercise the man beyond 60 ought to take has always been a question. Undoubtedly the ability of the human tissues to repair themselves begins to diminish after middle age and it is not safe to put increased stress upon them.

Recently in England, as pointed out by Dr. H. Gifford in the *Nebraska State Medical Journal,* Lord Grey announced his opinion that every old man ought to take at least one hour's exercise a day in the open air. In contrast with this statement, Joseph Chamberlain said that all the exercise necessary for a man in office was that involved in coming downstairs to breakfast and in going up again to bed. Many of the most important leaders in statesmanship take but little exercise after reaching the age of 60.

Personal observations indicate that many a man may indulge reasonably in exercise after the age of 60, particularly if he walks on the level or down hill and with some deliberation. Whenever the spirit of competition enters, however, danger is near. For this reason it is suggested that it is safer for the elderly to take their walks alone or with persons of the same age who will not hasten them unduly. Personal

vanity may cause them to put forth efforts to which their bodies are not competent, with disastrous results in the way of death from heart failure.

EPILEPSY

ELSEWHERE in this issue of HYGEIA appears a statement relative to several forms of proprietary medicines promoted in this country for the control of epilepsy, a disease upon which scientific medicine has been working practically in vain for many years. There are innumerable theories and conceptions as to the nature of this disease, none of which has, however, been absolutely established.

The condition is not exclusive to man, but is found in birds and, in fact, in all animals. In animals as well as in man it may be without apparent cause or it may be associated with special disturbances in the brain or with general diseases or intoxications. The condition has been found to be hereditary in some cases in animals, but, as in the case of man, it is presumably the structure of the body that is inherited and not necessarily the disease. Definite anatomic changes which would explain the incidence of epilepsy have not been found either in animals or in man.

Present attempts, as indicated by James Collier in a recent discussion of the subject in the London *Lancet*, point toward investigation of the chemistry of the body, the food taken in, and the digestion thereof. Possibly some irritant of a chemical nature, circulating in the blood, might be responsible for bringing on the symptoms. Much investigation has been made along this line but here also without conspicuous success. It is known that some chemical changes associated with epilepsy do take place, that the absence of certain chemicals from the blood leads to convulsive disorders, that certain glands secrete substances associated with the amounts of chemical substances in the blood. The evidence is only suggestive and does not lead to a specific method of prevention or of cure.

Doctor Collier is inclined to believe that the digestive relationship is of the greatest importance to the cause of epilepsy and that studies of metabolism are more likely to lead to a solution of the epileptic problem than any others. The evidence in support of this belief is highly technical but so convincing as to demand the most careful consideration.

Fundamental to all of this is the work of Doctors Dandy and Elman, who found that from one-third to one-seventh the dose of a certain poison required to produce convulsions in normal cats would produce such attacks when the brain had been slightly injured in any way. In other words, forms of epilepsy that are associated with lesions in the brain may also be due to some toxic substances circulating in the blood; these toxic substances may not bring on the convulsions unless injury to the brain itself has lowered its resistance, as one might say, to the convulsive attack.

THE NEWER KNOWLEDGE OF RICKETS

DR. ALFRED F. HESS, who has contributed notably to our knowledge of the disease called rickets, the methods of prevention and cure, has recently summarized the way in which numerous sciences have aided in establishing the fundamental facts. Today scientific medicine is based on all the fundamental sciences including anatomy, physiology, biology, pathology, bacteriology, chemistry and physics. Only with the aid of these sciences and by the use of experiments on animals would it have been possible to make the discoveries that have put this disease under control today.

In 1650 a physician named Glisson first described the signs and symptoms of what was called "englische Krankheit," because it was so widely prevalent in England. Since that time workers all over the world have contributed factors of importance which have led to our modern conclusions regarding the prevention of the disease.

One of the first facts of importance to be determined was the observation of Mellanby that the disease could be produced in puppies by depriving them of some factor in their diet that was soluble in fat. Although it was thought at first that this factor was the fat-soluble vitamin A, it was later learned that the specific vitamin is vitamin D. American investigators showed that the elimination of phosphorus from the diet would result in the appearance of the lesions of rickets in rats. Chemists showed that phosphorus was low in the blood in rickets, particularly during the winter months, and that it increased in the blood with the advent of sunshine in spring.

In 1918, an investigator named Huldschinsky demonstrated the importance of light and the fact that ultraviolet rays are a specific preventive and curative factor in rickets. The physicists proved that it was ultraviolet radiations of a certain length only that would protect the animal from rickets when fed on a diet deficient in certain substances. In 1924, Hess and Steenbock showed that the ultraviolet light radiations

could act on food substances to produce the important substance. Eventually it was found that ergosterol, which is associated with cholesterol in the human body, is the substance from which the body manufactures the rickets-preventing material when it is exposed to the important ultraviolet rays. This substance is so potent for this purpose that as little as one ten-millionth of a gram daily is sufficient to confer protection. There are 30 grams in an ounce, so that the amount required is one three-hundred-millionth of an ounce.

It is generally recognized today that all the great discoveries in medical science represent the combined work of investigators in many fields. Each discovery is based on several fundamental observations correlated toward a definite end. The work on rickets particularly is an indication of the way in which these studies, which are apparently of little usefulness in some instances when looked at alone, may be combined to eliminate from the human race a vast amount of unnecessary distress.

BIG THRILLS AND LITTLE DANGERS

RESIDENTS of the temperate zones think of their own latitudes as the only places fit for human habitation. Geographic ideas of the remote have always been accompanied both with disfavor and with terror. To the uninformed the arctic region is a place of famine, and the tropics sinister with sudden death.

Writers in the past have been partially to blame for this attitude. Of course, adventure is to be had in remote places and it is much more interesting if it takes place beyond the rim of the world. As a matter of fact, however, men and women are as safe in Central Africa as in Chicago—and this is no reflection on Chicago. A bank was conducted in a tent on the Mackenzie River and more drownings have taken place above the Chain Bridge that spans the Potomac than have ever occurred in the rapids of the Chagres. Only recently, have writers been profiting by debunking the traditional.

When Mary Bradley, Vilhjalmur Stefansson and others of their qualities are believed, the reading public will begin to realize why old residents speak of the Canal Zone as "home" and why they think of the tropics with benevolence. Presumably even a maharajah would not slap a tiger on the nose. The resident of the isthmus uses a similar brand of common sense. He avoids the anopheles mosquito and pursues both business and pleasure with impunity.

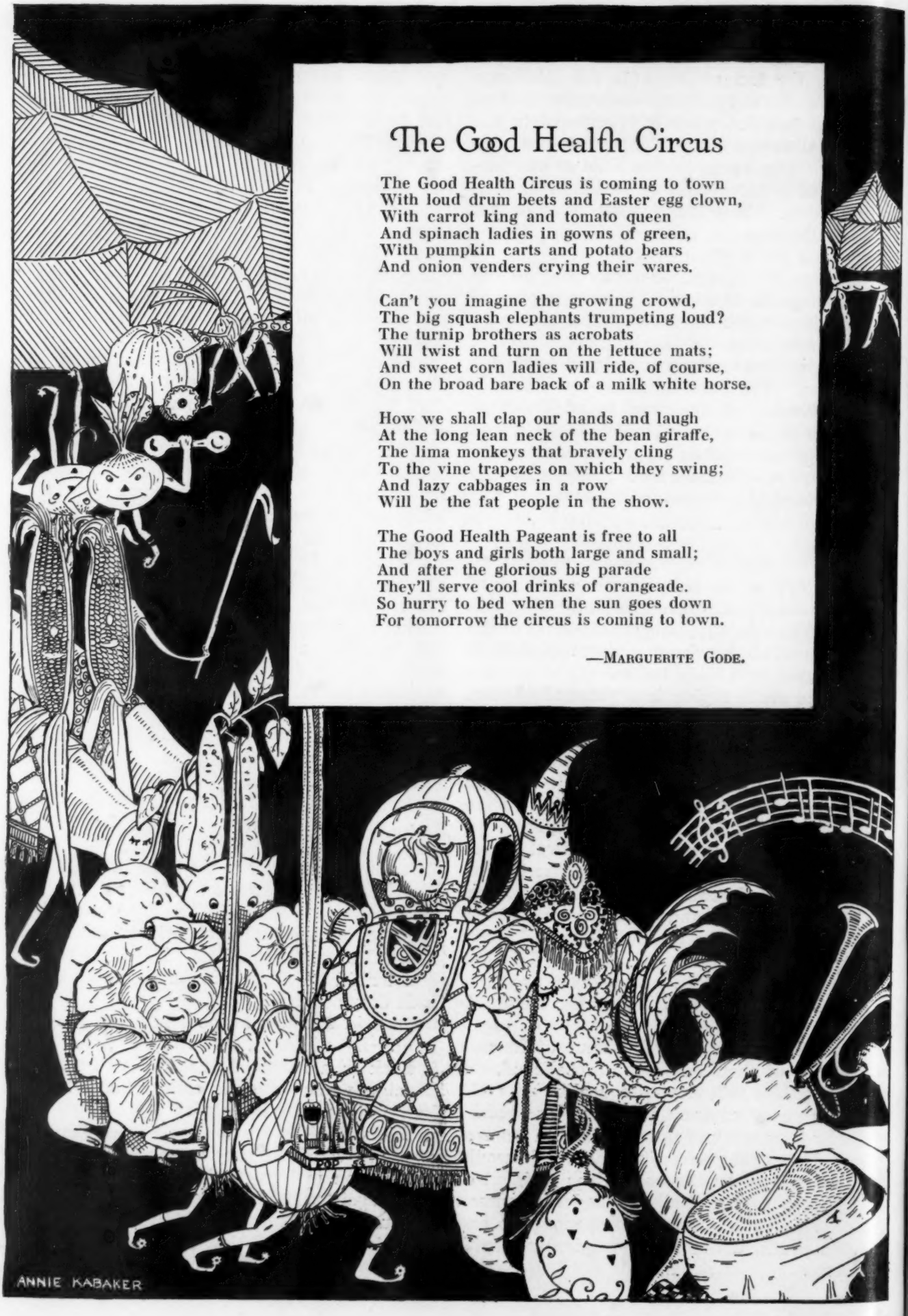
There was a time when this jungle pest was hard to avoid. That was in the construction days of the canal, when, during one year, among an average force strength of 26,547 employees there were 21,793 cases of malaria. But the settlements of the Canal Zone and the cities adjacent to it now lie within sanitated areas. Standing water has been eliminated, the mosquito is not allowed to breed and malaria is a reportable disease. Each case is treated, followed up, and if possible the place where infection was contracted is determined. Although residents of the Zone are not prisoners and cannot be kept by force within these areas, they are well informed about malaria and few cases of the disease now are encountered.

In 1927, the average force strength of employees of the Panama Canal and Panama railroad was 13,560. Among these, only 145 cases of malaria occurred. This is the lowest rate ever recorded in the Zone. Always the number of cases is greater among the negro than among the white population; there are more negro than white employees and the average intelligence and carefulness of the negro is lower.

According to a recent report, "from an average strength of 2,947 white employees, there were but thirty-eight cases of malaria during the year of 1927. Investigation showed that twenty-one of these persons undoubtedly obtained their infections while outside of the sanitated towns. Probably a complete knowledge of all the facts would show that some of the other seventeen cases should also have been charged to unsanitated areas. These figures indicate how little risk there is of contracting malaria when living in our protected towns provided one does not visit outlying regions of the sunset."

So the old resident of the Zone does his eight hours or more of work a day—just like people elsewhere. He is judged by standards of efficiency as are people elsewhere and for this reason he must keep well. He plays his golf and tennis, he attends horse races, he does a little deep sea fishing.

Once in a while, he goes into the jungle to hunt. By nightfall, however, if possible, he is back in a sanitated area, where he smokes his cigar while resting on a stone bench beneath lacy foliage. Or he sits on his softly lighted porch, while the trade wind rustles the newspaper in which he may be reading about heat prostration in New York. Tomorrow he may hunt again. He has come in, not to avoid devouring beasts but to avoid the mosquito, the only jungle animal that can seriously menace him.



The Good Health Circus

The Good Health Circus is coming to town
With loud drum beets and Easter egg clown,
With carrot king and tomato queen
And spinach ladies in gowns of green,
With pumpkin carts and potato bears
And onion venders crying their wares.

Can't you imagine the growing crowd,
The big squash elephants trumpeting loud?
The turnip brothers as acrobats
Will twist and turn on the lettuce mats;
And sweet corn ladies will ride, of course,
On the broad bare back of a milk white horse.

How we shall clap our hands and laugh
At the long lean neck of the bean giraffe,
The lima monkeys that bravely cling
To the vine trapezes on which they swing;
And lazy cabbages in a row
Will be the fat people in the show.

The Good Health Pageant is free to all
The boys and girls both large and small;
And after the glorious big parade
They'll serve cool drinks of orangeade.
So hurry to bed when the sun goes down
For tomorrow the circus is coming to town.

—MARGUERITE GODE.

"JUNIOR"

JUNIOR AND MR, GERM

BY

HOWARD W, HAGGARD

"MR, GERM"

CHAPTER IX

Junior Sees One of Mr. Germ's Fourth Cousins.

JUNIOR would never have known that it was a woman coming toward his baby sister if Mr. Germ had not told him. She seemed to Junior to be nearly as big as a mountain. After looking at her carefully, though, Junior finally recognized her. She was the nice woman who lived in the house next to his house.

"Fine," thought Junior. "She will wash the baby's face. I hope that she washes the baby's teeth too and gets rid of the germ that went into her mouth."

As the woman came near to the baby she smiled; the baby smiled back and held out both her arms for the woman to pick her up.

Junior smiled too, for he was sure the lady would wash the germs off sister's face. Mr. Germ was not smiling. He stood beside Junior and looked as glum as glum could be. There were great tears in his eyes.

The woman reached down and picked up baby sister.

"Hooray! Hooray!" shouted Junior. "Wash her face, please."

"Please do not," shouted Mr. Germ just as loud as Junior had shouted. All the germs on baby sister's face shouted too. "Do not wash her face and rub us off!"

Of course the woman did not hear either Junior or the germs. She reached down, picked up the baby and held her at arms' length. The baby laughed. The woman smiled and said:

"You dear, sweet thing, I could love you to death."

But the lady did not wash the baby's face and rub the germs off, and wash baby's teeth and get the germ out of her mouth. Instead she kissed the baby right on its mouth. Then she put the baby down on the ground again and walked away. At this Junior was sadly disappointed. He put his hands over his face and cried. Mr. Germ shouted and danced and jumped up and down with joy.

SHE KISSED THE BABY ON IT'S MOUTH,

At first Junior did not pay much attention to Mr. Germ. Once he thought he would pick him up again and throw him down on the ground. But what was the use? Mr. Germ would just bounce up and down for a while and then lie on his back and laugh.

Suddenly Mr. Germ took hold of Junior's arm and shook it. "Look!" he cried, "Look! One of my fourth cousins! One of my handsome fourth cousins!"

"Let me alone," said Junior. "I do not want to see your fourth cousin or any other germ."

Mr. Germ was much excited and kept on shaking Junior's arm. "Look," he said. "Look, I tell you! My fourth cousin is on your baby sister's face. Is he not handsome? My! I wish I looked like he does. If he is lucky he may get into the baby's mouth."

Junior looked and what he saw nearly made him stop breathing. There was one of Mr. Germ's fourth cousins right on baby sister's face and near the corner of her mouth.

Junior did not think that Mr. Germ's fourth cousin was handsome. No indeed! That fourth cousin was shaped like a sausage. He had arms all up and down each side; or were they legs? Junior could not tell. He did not have a tall round hat like Mr. Germ; instead he wore a cap pulled down over his right eye. His face was bright green and he had a pink moustache. His body was blue and his arms were yellow.

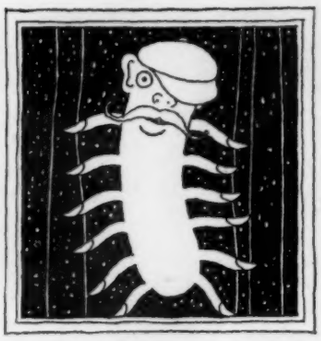
Mr. Germ's fourth cousin rocked back and forth at the corner of baby sister's mouth. He was trying to get inside. If he did, he would raise a family and give baby sister a cold in the head and perhaps pneumonia.

There was nothing that Junior could do to stop that fourth cousin from getting into baby sister's mouth. He was too far away and too small to do anything except cry. Finally he turned to Mr. Germ and asked:

"How did that germ get there?"

"That nice woman put him there," replied Mr. Germ, smiling. "She is a very nice woman indeed."

"I know her," said Junior, "and she would not put one of your fourth cousins on my baby sister's face for anything in the world. She loves my sister and would not want her to be sick. How did your fourth cousin get on my sister's face? Tell me, please."

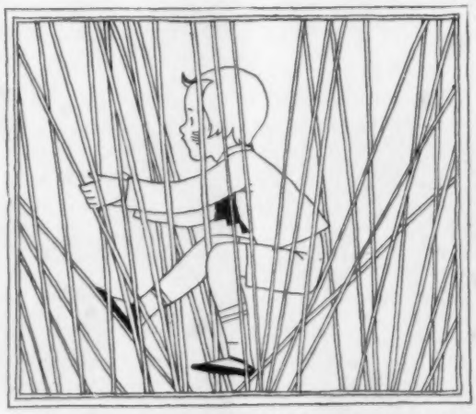


THE FOURTH COUSIN

"I am telling you the truth," replied Mr. Germ. "That woman put my fourth cousin on your baby sister's face. The woman has a cold and my fourth cousins are living in her nose and mouth. When she kissed your baby sister one of my fourth cousins fell off of her lips onto the baby's mouth. I certainly do like women who kiss babies."

"Perhaps you do," said Junior, "but I do not. I do not like the kind of women who kiss babies and leave dreadful germs on their faces."

"Well," said Mr. Germ, cheerfully, "people always do leave germs when they kiss babies. More germs live in people's mouths than almost anywhere else. Everything their mouths touch has germs on it. It is nice for the germs when people kiss babies. That is one of the best ways we have of traveling from one person to another.



JUNIOR WAS CARRIED AWAY IN THE BUSH

"Some of the germs make people sick, do they not?" asked Junior.

"Certainly," replied Mr. Germ, "but the germs cannot help that. All they want is something to eat, and they must travel around in order to get their dinner. Kissing babies is a fast way of traveling; there are slower ways too. Sometimes two people drink out of the same water glass without washing it in between, or two people use the same handkerchief or the same towel or the same spoon. There are many ways of traveling."

"How can you travel on a glass?" asked Junior.

"Very easily," replied Mr. Germ. "I have traveled that way many times. If I am in somebody's mouth and they drink out of a glass I may be wiped off on the edge of the glass and stay there. Then when the next person drinks out of the same glass I am wiped off into his mouth. Of course, if the glass were washed with hot water and soap I should be killed. But some people are kind to germs. Perhaps they don't want to kill them; perhaps they would rather be sick."

Junior thought a long time before he said anything more. He was thinking of all the times he had wiped baby sister's face with the handkerchief he had used several times himself.

Finally he said: "I do not like people who kiss babies on the mouth."

"I do," replied Mr. Germ, cheerfully.

"If that fourth cousin of yours gets into my baby sister's mouth will she be sick?" asked Junior.

"I hope so," said Mr. Germ, still cheerful.

"Oh dear," sighed Junior, "is there no way at all by which I can get to my baby sister?"

Junior cried to think how helpless he was. While he was crying he heard a faint buzzing noise. He thought that perhaps Mr. Germ had fallen asleep and was snoring. He looked at Mr. Germ and saw that he was wide awake. Mr. Germ was looking toward the sky as if he expected to see some one there.

The buzzing noise became louder and louder. It sounded as if an aeroplane were flying somewhere near. Mr. Germ smiled happily and looked about in all directions. The buzzing noise became still louder. Then a shadow fell over Junior and Mr. Germ. The buzzing became so loud that Junior wished he could let go of the grass and put both of his hands over his ears.

"Hooray! Hooray!" shouted Mr. Germ. "Help has come at last. Now, perhaps I can travel too. This is one of the best ways that my relatives and I know to travel. Hooray! Hooray!"

CHAPTER X

Junior Travels

THE buzzing sound that Junior heard grew even louder. The blade of grass to which he was holding suddenly bent over. Junior held tightly with both hands to keep from falling off. Something hard hit him on the back. He was covered with what seemed to him to be a big thick bush.

Junior's hands slipped off of the grass and he was carried away in the bush. Mr. Germ

was holding onto the bush too and was just a short distance from Junior. Up and up they went into the air, sailing away with the bush. Mr. Germ was trying to talk to Junior. Although Junior could see his mouth move he could not hear a word he said, because of the loud buzzing noise. Higher and still higher they were carried up into the air.

Junior wondered what was going to happen to him as they went sailing through the air. If he let go of the bush he would fall to the ground. When he looked down and saw how far below the ground was he held on tighter. Junior's hands were becoming tired of holding to the bush and he was beginning to wonder if he would have to let go and fall to the ground.

Suddenly something hard seemed to come up and hit Junior on the back. For a moment he could not get his breath. He thought that he had fallen to the ground. But he had not, for there were the bushes about him and he was still holding to them.

IT WAS MUCH LIKE RIDING IN AN AEROPLANE

Junior heard Mr. Germ's voice and for the first time he noticed that the buzzing noise had stopped.

"Well! Well!" said Mr. Germ, "I hope you enjoyed the ride."

"Ride?" asked Junior, who was still dizzy. "Where am I?"

"You are on the foot of a fly," said Mr. Germ.

"Foot of a fly!" cried Junior. "What do you mean? I am in the middle of a bush."

Mr. Germ laughed. "What you think is a bush are the hairs on the fly's foot. Mr. Junior, you keep forgetting how small you have become. This is the same fly that bit you on the end of the nose before you went to sleep. I remember that you told him then that you wished he was as tired as you were and that there was a little fly to bother him and bite him on the end of the nose. You wished, too, that you were that little fly. You have nearly had your wish except that I have not seen you bite him on the end of the nose yet." Mr. Germ seemed to think this was funny and he laughed loudly.

"Is this fly going to hurt me?" asked Junior.

"I do not think so," replied Mr. Germ. "I do not believe that he knows that you are on his foot or could even see you if he did. I am not sure of that though, for you are much bigger than I am."

Junior looked about. What he had thought was a bush but really was the hairs on the fly's foot was resting on a flat but very rough surface. That surface looked as if it might be wood. It was wood. Junior knew where he was at last. The fly's foot was resting on the top of a box. It was the same box on which the fly had landed when Junior chased it with his hand before he fell asleep.

Slowly Junior crawled out from between the hairs on the fly's foot. He stood up and walked over the rough surface of the board. Walking there was like going over a hilly road. Junior walked around in front of the fly and looked up at it. He saw two great eyes. Those eyes seemed to cover the whole front of the fly's face and they looked to Junior as big as two round table tops.

Each of those big eyes was divided into hundreds of little eyes. They looked for all the world like little building blocks placed side by side to make round table tops. Between those great eyes the fly's nose stuck out as big and as long as a baseball bat.

Junior did not have much time to look at the fly. With a buzz-buzz it jumped up into the air and flew away. The wind made by the fanning of its wings knocked Junior down. Over and over he rolled on the rough top of the box. Junior was banged and bumped and knocked this way and that. Finally he stopped rolling and then he stood up. When he got his breath again he looked around. The fly was gone.

Junior was angry. He was just as angry as he had been when the fly had bitten him on the nose and he had slapped his own face without hurting the fly. Junior's anger made him forget that the fly was now many times bigger than he was; it made him forget the bruises he had received when he was knocked over on the top of the box. Like most people, too, when they are angry, he forgot what he was really trying to do; he forgot about baby sister.

Junior stood on the top of the box and looked at the fly circling high over his head like a great bird. He raised his hand and shook it at the fly. "Mr. Fly," he shouted, "if I ever catch you I shall do something to you for knocking me around. I do not know what, but I shall do something."

By the time Junior had finished talking the fly had come closer and was circling near the box. Junior reached down and pulled a big splinter from the top of the box; that is, the splinter looked big to Junior. He waved the splinter at the fly and shouted: "Come back here, come back here, Mr. Fly."

Of course the fly could not hear Junior. In fact, Junior could not even hear himself because of the loud buzzing noise that the wings of the fly made. Just as if he had heard Junior the fly came closer and landed on the box near him. Junior ran as fast as he could over the rough surface toward the fly. He was still carrying his stick of wood.

The fly had stopped near a crack in the boards that made the top of the box. The crack was between Junior and the fly and it was too wide for Junior to jump across. Junior stopped when he came to the crack. He reached out as far as he could toward the fly, waved his stick at it and shouted.

"I shall do something to you, Mr. Fly. Come closer and see what I do."

That fly certainly could not have heard Junior, but it did come closer. It put its wing down over the crack so that it reached to the side on which Junior was standing. The edge of the wing seemed to Junior to be as thick as the top of a table. The wing hit Junior's legs. They were knocked from under him and again he was sent rolling over on the rough surface.

When Junior stood up he was even more angry than he had been before. If he had not been angry he would have been more careful. But like all people who are angry he did not stop to think.

Picking up his stick, Junior ran as fast as he could toward the fly's wing. Just as he was about to step on it the fly lifted its wing. Junior could not stop quickly enough and ran a little way under the wing. Down came the wing on top of Junior and held him tightly against the top of the box.

The fly's wing pressed Junior down against the rough surface of the box and that hurt. Junior was becoming less angry and more frightened. He lay under the wing and wondered how he would ever get out. Finally the wing lifted a little and Junior scrambled out. He was not badly hurt, just bruised where he had hit against the boards.

This time Junior was more cautious. He walked slowly over to the fly. He stepped out on the top of the fly's wing and ran across it. He reached the fly's back and quickly took hold of the short hairs that covered it.

"Now, Mr. Fly," he said, "I am here. We shall see what I am going to do."

With one hand he held tightly on to the hairs on the fly's back; with the other hand he raised his stick as high as he could raise it and then brought the point down hard on the fly's back.

Right then Junior was glad that he had a tight hold on the hairs. He was going to say: "How do you like to be struck when you are tired, Mr. Fly?" But he did not say anything. He just held on as tightly as he could. When he struck the fly the fly jumped and Junior was nearly thrown off of its back; he would have been thrown off if he had not held the hairs tightly.

The fly flew in a circle. Round and round it went buzzing as if it were angry. It probably was angry, too, for the sharp point of Junior's splinter had stuck a little way into its back.

When Junior found that he was not going to fall off the fly he began to enjoy the ride he was having. It was much like what he imagined riding in an aeroplane might be. He did not have much time to enjoy his ride though. The fly suddenly stopped circling and flew straight ahead. It landed against a steep hillside. Junior had not expected the fly to stop and was not holding onto the hairs on its back as tightly as he had at first. He was thrown from the fly's back onto the hillside. He rolled a little way, stopped, and then began to slide down the side of the hill. To keep from falling he put his foot in a rough place and took hold of a small tree that was growing on the hill.

With a buzz, buzz, buzz, the fly flew away and left Junior alone on the hillside. Alone? No, he was not alone after all. When Junior looked around he saw Mr. Harold Augustus Germ sitting beside him.

(To be concluded in the June issue.)

New Books *on* Health

Reviews of Interest to General Reader, Parent and Teacher

CULTIVATING THE CHILD'S APPETITE

By Charles Anderson Aldrich, M.D. Price, $1.60. Pp., 127. The Macmillan Company, New York, 1927.

THE Child-Who-Will-Not-Eat is the hero of this volume. The scene is laid in countless homes throughout the country, especially in the homes of the well-to-do. The time is the meal hour—breakfast, dinner, or supper—and the actors are a young child and a variable number of adults—mother, father, aunt, grandmother, nurse. The action consists in a battle waged between the Child-Who-Will-Not-Eat, on the one hand, and the Adult—or Adults-Who-Will-Make-Him-Eat—on the other, the child usually emerging victorious.

The author is Dr. C. A. Aldrich, a pediatrician of Winnetka, Ill., who, either in person or by verbal reports, has witnessed innumerable stagings of the foregoing drama, under a wide range of situations and with a variety of actors. Fortunately he has been successful in preventing the recurrence of these objectionable scenes in a large number of homes, and the book is a frank attempt to pass his methods on to others.

In brief, the author strives in the ten short chapters of this book to analyze the cause of the present widespread condition of anorexia among young children and to outline methods of prevention and cure. As a basis for an understanding of the problem he first reviews the nature and mechanism of appetite and hunger and calls attention to the important but commonly overlooked point that the "primal eating urge" is a natural asset of all healthy animals and that appetite and hunger will be normal in a well child unless they are tampered with. He then proceeds to point out the methods and extent of such tampering and their harmful results.

Fundamental to the entire problem he considers the striving of parents and physicians for impossible ideals of development. Too great devotion to height-weight standards with forced feeding of diets of specified caloric value in an attempt to bring children up to certain standards starts the difficulty in a large percentage of cases. Revolt of the child against too much food or too much supervision or dictation as to what and how he shall eat is the natural result. This revolt shows itself in refusal to eat at all, or to eat only after a long siege of urging, wheedling, threatening, or a series of vaudeville acts staged by the desperate parents.

Although granting that illness or physical defects such as abnormal tonsils or adenoids may be the initiating factor in many cases, Dr. Aldrich is inclined to lay the blame in the large majority of cases to psychologic and simple physical factors rather than clinical ones. Too much adulation, attention and solicitation, too many attendants and similar factors are at the root of the evil; while overfeeding, too little outdoor play, too many sweets, and between meal eating are also to blame.

The book, however, is more than an analysis of what is wrong; it is preeminently an explanation in simple, straightforward language of how to prevent this difficulty in children's feeding and how to deal with it if it does arise. It amounts, indeed, to a manual of directions for "cultivating the child's appetite," and as such should be welcomed by parents and others having to do with the feeding of children.

The purpose and general tone of the book is in accord with the best opinion. One cannot, however, refrain from inquiring where the young child who is nourished without milk—as the author says he may be—gets his full quota of calcium for normal bone and tooth formation, and one cannot but wonder whether the deliberate use of negativism as a means of controlling a child is a wise procedure to suggest to parents. Such points of dissent, however, are few and the book may be endorsed wholeheartedly almost in its entirety.

LYDIA J. ROBERTS

HOW TO COOK FOR CHILDREN

A COOK BOOK FOR MOTHERS. By Estelle M. Reilly. With an introduction by Charles Gilmore Kerley, M.D. Pp. 245. G. P. Putnam's Sons, New York, 1927.

THE young mother of today learns from pediatrician or neighborhood health center the correct diet for her children and the proper amounts of foods to be given them at different ages. What she does not always learn is how to prepare these foods, and so she encounters in the kitchen many discouragements and failures.

Estelle M. Reilly, a Vassar graduate with six children, realized early in her career as mother that cooking for children is not a simple procedure, if the needed foods are to be prepared palatably and in the desired variety. Rather, it is a complicated science needing study and guidance. From her own experience and studies, Mrs. Reilly has prepared a cook book that will prove helpful in carrying out the doctor's directions as to diet.

The book deals with the preparation of cereals, beverages, breadstuffs, vegetables, fruits, meats and desserts. Explicit directions are given. Concluding chapters deal with sample menus and marketing suggestions.

Mrs. Reilly advises mothers to let their children assist them in cooking whenever it does not interfere with naps and outings. They enjoy it, it is good training for them—for hand, eye and mind—and it is amazing how much help they can be. Best of all, it provides companionship of mutual value.

MILDRED WHITCOMB

FOOD AND THE PRINCIPLES OF DIETETICS

By Robert Hutchison. Pp. 610. Price, $5. William Wood and Company, New York, 1927.

THIS is the sixth edition of a well established British textbook on food. It is far too complete to be useful to the average reader, but it contains a vast amount of data that make it a valuable reference book for the person especially concerned with feeding problems. Its distinctly British character makes it a little less useful for American readers than various good American books on the same subject.

MORRIS FISHBEIN, M.D.

News *and* Views

From the

FIELD OF HEALTH

DUTCH SCIENTIST BUILDS ROOM OF SILENCE

Absolute quietness has been approached, though not attained, in a room built for experiments on the sense of hearing and the mental reactions from things heard, according to a report from the University of Utrecht.

A Dutch scientist, Professor H. Zwaademaker, has constructed this cube of silence, which consists of two rooms, one inside the other. The air has been pumped out from the space between the walls making a vacuum like that between the walls of a vacuum bottle. The walls are built of layers of wood, lead, felt and other sound-absorbing materials. Inside the inner room, it is said, no sound can be perceived by the human ear, though delicate physical instruments detect some faint sounds.

WHEN CHILDREN GO JOB-HUNTING

Children who want to work are usually pathetically ignorant of the type of work they can do and of their fitness for it, says Dr. Mary S. Hayes, director of vocational service for juniors in New York, quoted in the *American Child.*

These young job-hunters almost always seek something higher in the social scale than what their parents do, Dr. Hayes has found. Children of rag pickers and pedlers decline such jobs for themselves. "I will do anything that is clean," said the daughter of a furrier whose shop, in the rear of which the family lived, reeked with poisonous dyes and flying hair from scraps of fur.

Few of them have any aspiration for a special calling. One boy said he wanted a job boxing in the ring. Another announced that he wanted to be a retired business man. Still another wanted to be a doctor. When the counselor got to the bottom of his ambition it was found that a doctor who had an office near where he lived drove a car and wore clothes that looked as if he were "a rich fellow."

Dr. Hayes emphasized that there are few jobs open to children of school age and most of the places they can fill are blind alleys leading nowhere.

AFRICAN NATIVES CLAMOR FOR VACCINATION

A seven years' epidemic of smallpox among the natives of South Africa is described in the *Ohio Health News.* The first natives to be vaccinated were 500 school boys, who were later used as messengers into infected districts. The evident protection afforded the boys caused the natives to clamor for the treatment.

Whenever the disease appeared, the people would make a grand rush to be vaccinated. Dr. A. B. Lippert, who tells the story, says that one morning he was awakened before daylight by a man rattling his window screen, saying "Pocken have broke out in our town and I want to be vaccinated."

Within an hour thousands of natives had gathered in the compound and it was necessary to station men with clubs among the crowds to keep them in order. Within four days more than 3,000 natives were vaccinated. No dressing was used and although there were varying degrees of reaction, only six persons of this lot had any serious infection.

HIGH BLOOD PRESSURE MAY CAUSE ACCIDENTS

High blood pressure has been indicated as a probable cause of automobile accidents after an investigation made by two psychologists of the Personnel Research Foundation.

Even if the blood pressure is not dangerously high, it may be a symptom of some incipient disease that may affect a man's general health and temperament so much as to interfere with safe driving. This condition was found in many drivers more than 50 years old and this group had twice as many accidents as the men of the same age and experience whose blood pressure was normal.

ADVISES AGAINST SHIELD ON VACCINATION

Warning against the use of any shield or dressing for a vaccination wound was recently issued by the U. S. Public Health Service. Studies conducted over a period of several years have shown that such dressings have caused severe "takes" and have delayed healing. When a dressing is not used and the proper type of insertion has been made the spot will usually develop a dry scab without having been an open sore.

Should an open sore develop, as occasionally happens through accident or improper care, an antiseptic dressing may be applied for a few days. The surgeon-general advises loose layers of gauze pinned inside a loose fitting sleeve, rather than a tight bandage on the arm.

LAUGHTER HELPS WEAK HEART

It is often said that laughter is a tonic. Now a scientist advances the theory that hearty laughter is one of the most favorable influences that may be exerted on a heart that misses a beat now and then.

Dr. James Walsh, in an article on the treatment of heart disease in *International Clinics,* tells of a patient who was much depressed by the knowledge that his heart was not acting properly. Such patients always have a tendency toward glumness and are afraid laughter will make their hearts stop beating. But it has the opposite effect, the physician declares.

It is probable that this is due to the fact that the up and down movement of the diaphragm in laughter causes direct massage of the heart and stimulates its activity, said Dr. Walsh.

PARENTS' EXPOSITION

An exposition for parents was a novel event in New York the last week of April, sponsored by the United Parents' Association. Various social and civic agencies were invited to exhibit products or processes bearing on the health, safety, and efficiency of the home. Clothing, food, play equipment, model homes and schools were shown.

Wide World

FENCING GROWS IN POPULARITY

Agility of thought and movement alike are required in the ancient and honorable pastime of fencing, which is enjoying a recrudescence especially among women. The striking girl shown above is Catherine de Bernard, who recently won the national women's championship.

ON THE HEALTH TRAIL

Chicago girls sought the beauty that comes from perfect health in earnest this spring under the direction of numerous organizations interested in welfare of girls. It is hoped to make the Girls' Health Trail a national project.

Underwood and Underwood

Wide World

Going after a high one in a heated game of la crosse.

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Knock-Knees

To the Editor:—I am a boy 16 years old and I have knock-knees. Is there any way of straightening them without a surgical operation? I have heard there is a set of exercises that will work; is that a fact? If there is a cure, how long will it take?

W. A., Massachusetts.

Answer.—When a boy has attained the age of 16, the chance of straightening the legs and curing knock-knees without an operation is slight, as the bones have then become so firm that mere appliances or manipulation cannot change their shape without breaking them. Exercises will probably have little effect, for the same reason.

Nobody who has not carefully studied the case can properly give advice about such a condition. A competent physician, preferably an orthopedic surgeon, should be consulted for treatment.

Tapeworms

To the Editor:—How do tapeworms obtain their food? Must the entire worm secure its nourishment through the head? Since each scolex is supposed to be sexually complete of itself, and each scolex contains thousands of eggs possessing the ability to infect others, how is it that these do not grow into new tapeworms in the original host?

S. A. H., Wisconsin.

Answer.—Tapeworms apparently obtain their nourishment by osmosis through the body wall of each proglottid, or segment, of the worm and not through the head. The head, which is usually called the scolex, is merely an adhering or hold-fast organ and does not contain any sex organs or eggs. The tapeworm has completely lost its digestive tract.

The question as to why the eggs of each proglottid (not the scolex) do not grow into new tapeworms in the original host cannot be answered satisfactorily as this is an evolutionary peculiarity of the species. The most obvious reason for failure to develop in the same host is that eggs must first develop as bladder worms in the muscles of a second host before they are able to develop into tapeworms.

Nutritive Value of Egg-Albumen

To the Editor:—Is there any nutritive value in the white of eggs? If a person is told to eat so many raw eggs for weakness, should he use the entire egg or just the yolk? There has been so much said about this that I should like to have the matter settled once and for all. I had a weak heart and was told to eat raw eggs and milk. Then I was told just to use the yolk, that the white of the egg was worthless.

W. J. R., Tennessee.

Answer.—The white of egg (egg-albumen) is of high value as a food. It contains 12 per cent of pure protein, while the yolk contains 16 per cent of protein and 33 per cent of fat. Egg-albumen, or white of the egg, is one of the most readily assimilated foods of its type. It is more easily digested than the yolk, and in many instances, especially to invalids and young children, the white of the egg is given without the yolk.

Temperature of Milk for Infants

To the Editor:—What is the best temperature at which milk should be heated for feeding? How cold might it get before feeding should be stopped and milk rewarmed? What is the most suitable temperature at which drinking water should be given?

J. R., Pennsylvania.

Answer.—In order not to chill the stomach or to injure the delicate lining of the mouth and stomach with food which might be too hot, it is always advisable to have all food and drinking water at blood heat (from 98 to 100 F.). If the food cools off too much, it should be rewarmed. The simplest way to test a bottle feeding is to hold the shaken bottle to the cheek or to let a drop or two touch the upper part of the wrist.

Absolute Rest

To the Editor:—Is it possible for all of the voluntary muscles of the body to relax at one time? If so, when? For how long? How is this condition possible? What becomes of muscle-tone during this period? E. S., Illinois.

Answer.—It is not possible for all of the voluntary muscles of the body to relax at one time. Even during sleep (natural or anesthetic) when most of the voluntary muscles are relaxed more or less completely, some are not relaxed and may even be in a contracted state. At other times so-called relaxed muscles have more or less tone when normally innervated. In other words, the condition is purely hypothetical and never occurs.

Hiccup

To the Editor:—My baby, 7 months old, is troubled with hiccup from three to four times daily. Can you tell me what causes this? Is it normal? Spells last from ten to twenty minutes and nothing relieves him.

G. R. T., Pennsylvania.

Answer.—Hiccup is due to involuntary contractions of the diaphragm. The diaphragm is the great muscle that stretches across the middle of the body, dividing the thorax from the abdomen. In the thorax are the heart and lungs. In the abdomen lie the stomach, intestines, liver and other organs. The diaphragm contracts regularly with breathing, and in doing so enlarges the thoracic cavity, thus helping the lungs to expand.

The nerve to the diaphragm is called the phrenic nerve. It is long, arising in the upper part of the spinal cord in the neck region. Anything that irritates this nerve anywhere along its course causes a sudden spasmodic contraction of the diaphragm, which is called a hiccup.

The most common cause of irritation of this nerve is something in the stomach. This may be overeating, indigestion, or curds of milk. Often these are regurgitated back into the esophagus, the tube running from the mouth to the stomach. Swallowed air, which distends the stomach, may also be

a factor. In any case, the sensation arising from these stimuli is transmitted up the spinal cord and reflected along the phrenic nerve to cause a hiccup. Hiccup from any of these causes is of no serious significance. Caution as to overfeeding, proper diet, a swallow of water to wash out the esophagus or patting the baby on the back to get rid of swallowed air are all that is necessary. Practically all babies have hiccup at times.

A much more serious and fortunately more rare cause of hiccup is definite disease of the nervous system, such as infantile paralysis or sleeping sickness. In such cases the irritation is in the upper part of the nervous system and is transmitted directly along the phrenic nerve. The hiccup is severe and continuous; in addition, there are other symptoms of disease so that confusion in diagnosis is not likely.

In the case of the child mentioned, the hiccup is probably of the type common among normal infants.

Grafting Fingers

To the Editor:—Has any surgeon in this country or in Europe been successful in the grafting of fingers or hands? My hand was injured last summer and it was necessary to amputate three fingers and part of the palm.

M. L. R., Texas.

Answer.—Grafting of whole fingers or hands is not successfully performed. Lumps or projections may be grafted onto a deformed hand, which answer somewhat the purposes of fingers, or more particularly the thumb.

The effort to graft a movable member onto a deformed hand involves connecting tendons that will move and joints that will permit a range of motion comparable to that of a finger. This makes the surgical procedure most complicated and practically impossible, especially from a functional standpoint.

There is no report in medical literature warranting this inquirer's seeking help in Europe.

Blood Transfusions

To the Editor:—I have a friend who has given blood for several transfusions. He seems in splendid condition, has not lost weight or "pep" and has no physical habits that would otherwise dissipate his energies. Is there any reason why he cannot continue indefinitely giving blood, provided his blood count and general condition stay all right?

F. T. K., New York.

Answer.—The criterion as to whether or not a given person should continue to furnish blood for transfusion is dependent upon the result of the withdrawal of blood and his reaction. If he continues to keep his weight, his good general condition, with abundant energy and no signs of weakness, and if the condition of his blood remains entirely normal, there is probably no harm in his serving as a donor for a considerable number of transfusions.

In some cases, it has been found that the donor gets nervous from the thought of loss of blood and in such cases the physician often advises against further depletion in order to protect the patient from a psychic reaction.

Discoloration of Teeth

To the Editor:—Is there anything that can be done to restore the color of a tooth when the nerve has been killed?

M. W., New York.

Answer.—Tooth bleaching on the whole is not satisfactory. Chlorine has been applied with varying results and always with more or less danger. Peroxide of hydrogen is a mildly successful treatment. There is nothing that the patient can do for himself. There is a remedy, however. If a front tooth is badly discolored it can be covered with a porcelain jacket crown, which when properly made will restore the normal appearance.

Cod Liver Oil

To the Editor:—In health work in high school we are having trouble in getting the boys and girls to take cod liver oil, on account of the taste. Telling them that they will learn to like it does no good. Is there any reliable substitute for vitamin D? The boys and girls have asked me about "Coco-Cod," which is advertised in the local papers.

J. C. A., Ohio.

Answer.—It is a question whether it is wise to urge boys and girls beyond the age of childhood to take cod liver oil, except when there is a special reason for it. In such cases some of the more recent preparations of cod liver oil are free from objectionable odor and taste to most persons. They have an advantage over the tablets in that the oil contains the nutritive material as well as the vitamins.

In the majority of cases, young persons living on a varied diet of meat, milk, eggs, fruits, vegetables and cereals, sleeping in well ventilated rooms and spending much time outdoors, do not need cod liver oil.

The only tablets that have been accepted by the council on pharmacy and chemistry of the American Medical Association are Oscodal tablets, which are advertised in HYGEIA. The council believes that the manufacturers of these tablets have presented evidence of the vitamins contained in the oil.

The bureau of investigation of the American Medical Association supplies the following report on Coco-Cod: "We know nothing about the vitamin content or palatability of 'Coco-Cod.' From such labels as we have seen of the product, there is merely a statement made to the effect that the stuff contains vitamins A, B, C and D, but nothing is said regarding the amounts of these accessory food factors. If Coco-Cod is essentially a cod liver oil preparation that has been standardized for the fat soluble vitamins, the product may be worth while. The advertising shows that it is sold in two forms, liquid and tablets. Undoubtedly the liquid form would have higher food value, for obviously the cod liver oil itself could not be put up in tablet form."

Tuberculosis

To the Editor:—I have had tuberculosis for four years. Eighteen months ago I had a breakdown and started on the cure with three cavities in one lung. The other lung was sound. My daily temperature was 100 and 100.2, and the pulse rate was from 100 to 120. I was extremely nervous and had night sweats. Since I have been in bed I have gained 60 pounds. My temperature is now from 99.2 to 99.6 and my pulse rate from 90 to 110. I am not so nervous. I still have some light sweats. I feel stronger, but have no endurance. Should I still depend on rest for a cure or should I try pneumothorax? Some days my cheeks are flushed. Is this a sign that I am not improving satisfactorily? What is the difference between the flush that comes on with fever or fatigue in the early stages and the hectic flush of the later stage? Is a moderately bad cold that lasts for two weeks considered harmful? Is it harmful for one in this condition to take her own bath, comb bobbed hair and shake down the thermometer? When I began to rest, I had a bad cough and abundant sputum. Now I rarely cough and raise little sputum.

O. M., Tennessee.

Answer.—In view of the fact that this patient has a temperature of 99.2 to 99.6 and her pulse is still rapid, she should continue to rest as much as possible. Activity at this time will increase the temperature and pulse rate, and retard the healing process in the lung.

So many patients have been benefited by artificial pneumothorax (collapse of lungs) that it is worthy of consideration. Its use depends largely upon the condition of the lungs and a careful study of the case by a physician.

Medical Lib.

The flushing of the cheeks is not a sign one is not improving. There is probably little difference between the flush coming on after fatigue and the hectic flush. A cold lasting for two weeks may increase fever and pulse rate and add to general discomfort. It is not necessarily harmful, but tuberculous patients should try to avoid colds if possible.

The condition of this patient calls for continued rest; undertaking the tasks mentioned, however, should not prove harmful.

Synthetic Saliva

To the Editor:—How could saliva be duplicated? Where could the proper materials be secured to duplicate it or nearly so?

H. C. D., Illinois.

Answer.—It would be impossible exactly to duplicate the composition of saliva, because it is a product of biologic changes. In addition to assisting mastication and the swallowing of food by the formation of a bolus, saliva contains a ferment known as ptyalin, which effects a change of the starches into sugar, a necessary process in the digestion and assimilation of starches. A similar ferment, diastase, develops in growing seeds and converts the starch in the seeds into sugar, which can be utilized by the growing plant.

Certain forms of diastase have been used when there seemed to be deficiency in the action of saliva. This is seldom, if ever, of advantage, however, because starch is also digested by a ferment secreted by the pancreas and any starchy material that escapes the action of saliva is digested by this more powerful ferment from the pancreas.

Leukemia

To the Editor:—I am a married man, aged 28, with four children. For fifteen months I have been suffering with leukemia, with enlargement of the spleen. The first eight months I was unable to work and had severe pain. I then began taking x-ray treatments, which relieved me a great deal and reduced the size of the spleen, but in the last six months it has not been reduced. I have had nineteen x-ray treatments. My legs swell at night. I have easy work or else I could not do it. Can a person live long with this sickness?

H. A., New York.

Answer.—Leukemia is a disease that is progressive, although the rapidity of its progress is variable; it is often greatly influenced by both x-ray and radium treatments. Symptoms may be entirely alleviated for variable lengths of time by such treatment but may return later. The first treatments are always of greater benefit than subsequent ones.

It is difficult to estimate how long a person with leukemia may live. Well authenticated cases are known in which patients have been entirely free from symptoms for as long as six or eight years.

Insulin in Tablet Form

To the Editor:—My son, 26 years old, has diabetes. He is a traveling salesman, and at times it is inconvenient for him to use his insulin hypodermically. Some time ago I read of a professor in Germany who had discovered and was using insulin in tablet form with success. A physician advises me to write you for your knowledge and opinion of this remedy. T. J. R., Illinois.

Answer.—Two or three substitutes for insulin, which can be taken by mouth, are now being experimented with in clinics but not one of them has yet been shown to be entirely satisfactory and the one mentioned from Germany cannot yet be had for general use. Competent medical men with large experience in diabetes are testing this remedy in hospitals in which the patients are under thorough control and in the course of a few weeks or months, definite information as to how fully it will take the place of insulin may be available to sufferers from the disease.

Bowel Troubles

To the Editor:—I should appreciate advice on treating stagnation of the colon; also dropped bowels. I have been on a buttermilk diet for four months and have gained 15 pounds and some strength, but the condition and position of the bowels remain about the same. I am 48 years of age. E. C., New York.

Answer.—So-called "dropped bowels" are rarely of sufficient importance to warrant operation. Sometimes a well adjusted abdominal band is helpful.

Such conditions as "stagnation of the colon," cannot be intelligently treated except by a physician who has personally examined the patient, and made a careful study of the case.

Transplantation of Organs

To the Editor:—My students tell me that surgeons have been able to transplant the stomach from an animal, as a calf or a goat, into man. Is this possible?

N. B. Z., Kansas.

Answer.—We know of no successful instance of transplanting the stomach from an animal into man.

Effect of Dampness on Deafened Persons

To the Editor:—I recently returned to the Pacific coast from an inland state and find that the nearness of the salt water causes head noises to increase. I feel that I have lost hearing faster the five years I have lived in California than when I lived in Illinois. Going swimming in the ocean and getting salt water in the ear canals causes almost total deafness for forty-eight hours afterward, but if I insert rubber ear-stoppers beforehand I do not get totally deaf for forty-eight hours. A friend of mine living in Honolulu states that he is deafer out on that little island than when he spends his time on the mainland. That corroborates my own experience with salt air or salt water. Refined salt has the same effect as the salty ocean. Once a physician gave me diathermic heat in the ears, winding the ends of the wire with cotton and dipping this cotton in salty water before inserting in the ears. The result was additional deafness for a few days, caused by the salt. Have any other deaf persons had similar experiences with salt and found benefit by moving away from the salty ocean to inland states? If salt increases deafness rapidly cannot science tell us what is the opposite of salt? Would moving back to Illinois restore some of my lost hearing? C. A., California.

Answer.—In several types of deafness, residence in damp atmosphere aggravates the symptoms. This is true both for salt and fresh water surroundings. It is likewise true for all catarrhal conditions of the upper respiratory tract. In a high and dry climate the reverse is true, even though one's deafness may progress just the same.

In relation to swimming, much depends on whether the patient has permanent perforations in the ear drums. When no perforations exist, one's hearing should not be made worse from the effects of water in the canals of the ear after the water has been thoroughly drained and the tissue in this region has become dried.

Not under any circumstances should the person with perforations in the ear drum permit either salt or fresh water to enter the canals on account of the danger of a resultant suppurative process. It is doubtful whether salt water differs much from fresh water in this respect.

It is probable that this inquirer has given undue importance to the salt problem in water, and should he make his permanent residence in a high and dry atmosphere, his symptoms will be greatly relieved and his deafness will progress less rapidly than it does in the dampness of the Pacific Coast.